

## FIGURE 1A

Nucleotide sequence of the partial PK-6 from *Physcomitrella patens* (SEQ ID NO:1)

GCACGAGCTCAATCCTCATGTTTCGGACTGTGGACTAGCTGCCCTTGCACCATCTGG  
TTCTGAACGCCAGGTGTCGGCACAAATGTTGGGCTCTTTCGGTTACAGTGCCCCTGA  
GTACGCCATGTCTGGAACCTATAACCGTGAAGAGTGACGTCTACAGCTTCGGTGTTGT  
AATGCTGGAGCTACTCACTGGGCGCAAGCCTTTAGACAGCTCAAGACCACGATCCG  
AGCAATCTTTGGTACGATGGGCCACACCTCAATTGCACGACATCGACGCCCTTGCAC  
GAATGGTGGATCCGTCGTTGAAGGGCATCTACCCTGCTAAATCACTCTCTCGGTTTG  
CTGATATAGTCGCCCTTTGCGTCCAGCCGGAGCCCGAGTTCCGACCCCGATGTCTG  
AAGTGGTGCAGGCACTTGTAAGGCTGATGCAGCGTGCGAGTCTGAGCAAACGCAGA  
TCGGAGTCCGCTGTTGGGAATTGAGTCGAACGAGCCATCTGAGACTTCACCTTTGAG  
AGTACTGAAGCGCCCACTAGCCTAATCGTGCATCTTTGGCCATCTCGTTTCTGAGTG  
GAACACAAAGCTGGGTATATTCTTTGGTGGTTAAGCAACCATTGTCCCAATTTGAA  
CTTCCGCTGGNGAAGGTCTGTATGTTGAGAAACGATGCAAAGCGTTCGCGTGGTNTG  
CTTGAACTTCAAA

## FIGURE 1B

Nucleotide sequence of the partial PK-7 from *Physcomitrella patens* (SEQ ID NO:2)

GGCACGAGCCGAACTTCAGCAGCTTCTTCACATCTTCAGGTTGCTTGGCACCCCGAA  
TGAGACAATCTGGCCTGGTGTAGCCAGCACCGTGATTGGCACGAGTTTCCTCAATG  
GAGACCACAAGATCTGTCCCTTGCTGTTCCCGGACTCAGCGCGGTTGGCTTAGACCT  
TCTCGCCAAAATGTTGGTATTCGAGCCCTCAAAGAGAATCTCTGCCAAAGCCGCCTT  
GAGCCATACTTATTTGCTGATGTTGATAAGACAGCAACCTAAACACAACAGAACAA  
ATTCAAGAGAACCAGGTAACCTCTACCTGTCCAAGACGAAGGACATCTAACTCTTCA  
GTCAAACCTGGCCAATCATGCTGATTGGGAATTGAACCACAGGAACGAGGTGGGCA  
CCGTGGTTCGCTGTAGCATACAAAGTAGTCTGGAAGACTTGACATCGTTAGCTGGCA  
ATGCAGTATTTTGGAAATACAATTTTTCATTA AAAATCTCCTAAAGATTCAATATTG

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## FIGURE 1C

Nucleotide sequence of the partial PK-8 from *Physcomitrella patens* (SEQ ID NO:3)

GCACCAGACTATGACAAGCGCACGCCCTTGACATCGCCGCGTCCCTGGATTGTGTC  
CCTGTTGCTAAAGTCCTGCTTGCGGAAGGAGCAGAGTTGAATGCAAAAGACAGGTG  
GGGGAAATCTCCGAGAGGGCGAGGCGGAGAGTGCAGGATACATGGAGATGGTAAAG  
CTGTTGAAGGATTACGGGGCTGAGTCACACGCAGGTGCCCCGAGGGGCCACGTTGA  
GAGTCTGATTCAGGTTGCCCCTCCGTTGCCTTCTAACCGCGACTGGGAGATCGCTCC  
GTCGGAGATTGAACTTGATAACCAGCGAGCTCATCGGCAAAGGCTCCTTTGGAGAGA  
TTCGGAAGGCGCTTTGGCGCGGCACACCCGTCGCTGTGAAGACAATCAGACCTTCTC  
TGTCCAACGACAGAATGGTCATCAAGGACTTCCAGCACGAGGTGCAATTGCTCGTA  
AAGGTTTCGGCACCCAAACATTGTGCAGTTCTTCGGGGCTGTTACCCGTCAAAGACCT  
CTCATGTTAGTCACCGAGTTTCTGGCAGGGGGGCGATTTGCATCAGTTGCTGAGGAG  
CACCTAAATTTGGCTCCTGACCGCATCGTGAAGTATGCCCTCNACATAGCTCGCGG  
CATGTCTTACTTCACCATCGGAGCAGCCCA

## FIGURE 1D

Nucleotide sequence of the partial PK-9 from *Physcomitrella patens* (SEQ ID NO:4)

TCCAGCCCATTTGGTTGGCCACACACAGCTGTTTCATGAGTCACCCGCTTCAGGNTGA  
ACTGAAGAAACGTAACCTCCGTACGGCTATTTTACCAAATTTTCAAGCTCGTTGTCCC  
GCCATGATCCAAATGGAAGCTCAGTTTGCAACATGAAGTACATTGAACACACCTACC  
GCCACCAAGTCAGAAGCCAGGCCATGACCTTGTCTTGAATGATCTCGGGTGCTAAG  
AAATCAGCCATGCCACAGACTGTGAAAGTGCGCTCATCCGACATTTGCTTTGCAAAC  
CGAAAATCAACCAGCTGAAGTCGTCTTTCCGATCTATCATAAGAACATCGGGAGA  
GATGCCACGATATACAACGCCATCCTTGTGCAGAAGTTCGACGGCTAATACCACGTT  
GGCGACCAGAAAACGAGCTGAGTTCTCGTCTAAAGGTGACCGAAGTAGAAGTTCTA  
GAGGCCCAGCTAACACACAATTAAGAACGAGTGCCACATTGTCACTGTCAATAGGG  
GTGGCCAAGAGATGCGGCACGAATGGGGAAGGCCTCAGTTGCTTGAAAAGAGTTCT  
CTCCAATAGGACTTGGCCCTCCCGACCGAGTCTCTGAACTTTACGTCTCTGGTACCTT  
TTCATGCTTATGACGTCATCTGATTTCTTGCAGAGCACCACACCGACATCACAGCAA  
TCGGTTGAATAGACCTGGTGCCGATTCT

## FIGURE 1E

Nucleotide sequence of the partial CK-1 from *Physcomitrella patens* (SEQ ID NO:5)

TATGCCCATCTTCTCATACTCAGACCAGATCCTCTATTTCAATTACAGAAGAAAGTT  
GCTTGTGCAACGTATTGAAATCATCACCGTCATGGGCTTTCCGAGTAAAAATTCTTG  
TAATGGATAAAGTCATTTCTAGTCTGATCCATACAAGCTACCGACACAATGCTAGAA  
GCCTTGATTTACACACTACACACTAGAGAGTCTACAACCTCTTTTCCTACACTCTGCTT  
AGTTGCCTCATCCTCAACTCCATAAACCCCCATTCAATCATGTAAGACTTGAGAG  
AGGGAAACAGTAAGCAACCTTGTGCTATTTTAGTACCAGAGCAGAGGATGAACCAC  
TAGTCCTCCCAACGTAAGCCCTAATTCGCCGCAACAACCTCACGACGGAACCTCCGAC  
TTGGTCAAGGGTGGACAATATGATACATTGGAAGGTCGATTTTGCAAATGGGACGA  
AGCAGCGGAATTCTGGCTGCGCACTGATTGCAGAGAGCCATTCTGGGGGAGTTGAG  
TATACACAGTCCAGTCGTACACATGGTCGAGCTGGAATTTTTTCTGAATGAAAAGAT  
CACGGAACAAGCTTCGGAGGTACAGTAGTCAGGCTGCTCGTAAAAACCTANACTTC  
GCGGCGTGGTGCAAAAAGTCGGCAAATTGACTGGGATACCCATCACAAAGCTCCTC  
CCACAGTGGGGGTCATCTTGATTTTGTTGTGCATGTACTCGTGTTGCTTCTGGTCAGT  
GAGGGCGTTGCCCCGCCCTTCCCTTGCCATGGCAAATTGCCTCTTAGAAAGTACATAA  
GAATGTAACCCAAGTGATTCTATGTCATCTCTTCTACTGTGCTCGATTCTCTGTGCT  
GATTCCTACTAGCGTACCGTGCCGTCCCTGTGAAGCTCTTCCTATCTCGGTAAGGGA  
TATGCCTTCGTGTTGCCGGGTCCATGTACTCCTTTGCCAAGCCAAAATCTATAATGA  
ACACTTGGTTTCCTTGCCGACCGCAGCCCATGAGGAAGTTATCCGGCTTCAGGTCAC  
GGTGAACGAGCCCTCGAGAATGCACGTATTCCACCCGGTCAATCATTTGGTAACCGA  
GCATAATCACGGTCTTCAACGAAAACCTTAGCCACACACCTTAAAGAGGTGCAAC  
AGGTTTCGGCCCCAATAGGTCTAGCACCATCACATTGTAGTCTTCTGCTGCTTTTCCGA

**FIGURE 1E Continued**

ACCATCTCATGTTGGGCACTCCCTTCCCACCCGCAATATGTTGTACAAGCGCGACT  
CGTGCATTAACTCTCGTGC

## FIGURE 1F

Nucleotide sequence of the partial CK-2 from *Physcomitrella patens* (SEQ ID NO:6)

TTTTTTTTTTCCAATAGATTTGCATTACATAACTCCAAGTTATGATATGTACAGGTTA  
GCAACAAGCTAATGGCTGCAAGCAGTGAACATACTACCAAGGGAGAGATTCTCACT  
CCCTAGACTTCATCCTCGTACGTTACTTGGCAAGGATTATGGTTTAGTGATAAAAAG  
CTTCACAAGCCGGCAAGCATGCTGGTTGCTTCTGCTGCAATCTAATGATTATTCCTT  
AGGAATCGTATGGCAGAGAGCTACCACACAAAGCACTGACAATGGTTTGATGGTAA  
CAAGATAGAGATCCATTCATTCCTAAGTATGAGAGACCTGTAGTCTTAGCACCATTG  
TAGGACAGAACCACCGTTTTCCCCTCAATCAGGCTGTTGCCAAATGTAGAGCAACTC  
TCATCAACATAACAAGAGGGTTTGATAGAAGACAGAGCCCGGCTATATAACCACAA  
GCCCTGCGCCTACCTTATAACGGCTTGGATCCACCTCAACAGAAAGTGATTCAACTC  
CCTTGATAACCGGCTTTCGTAAATCCTCAAGTTGGCAGATGGCGGTTGTGGATGGCGG  
CTAGATATCCGCTTTGGGTCCGAAGTAACTGGAGAGCTCCTCTGCATCCCTGCTGAC  
GACCGTAAGCTGGTGGGACCAAGCTTACTGCTCCCTGTTTCGAGAGGAATCTACGACT  
TCTGCTGATGCCCCCTGAGGGCCTGCTGCTAGATAGGACAGCTCGCCTGGAGGAAGA  
ACCCCCCGAGTTGCATACGAAGATGTATGCATGCGCTCTGGTTCTGACACAACAGC  
AAGAGCAGAATCCTTAGCAGATTCATCAAGTCCAGGACTTTTGTGCTTAGATGAGTC  
CAAAGCATTTGCGACCCCGGAGCCATTTGCTCCTCCAGGAAGCCTGCGCCGAGAAG  
GATCCATTGGTTTCGGTGGGCGCTGCAGGTCTCGGCTTCCTGTAGCCCCAGTTCCAA  
GTGCACCACTGGTTTGCCCTGCAGAAGCACCCAGTCGAGTTGAACTGCCACCGGAA  
ATTTGTGACTGCTGGTACTTCAGAATTGTCCAGTCAAAAACGTAGTCAAATTGAAAA  
CCTGTAAAACATTTCCAGTTTAGGCAAACAGAAGTGGCACTGTAATAAACTGAAA  
ATCATCAAACATTCACAAACTATCTGTTTCGTTGATAGAGCATAGTAAAGTCTGCGCT

## FIGURE 1F Continued

TAGGATCAAGTCTTGATACATTACAATGCCCAAGCAAGAGTGAAACCTACAAAAGT  
TACAGTTTTTCATACCCTCACGAATAAAGAGGGTCACGGAAGATTCTTTTCAAATATGC  
ATAGTCGGGTTTGTTCATCAAAACGCAAGGACCGGCAGTAGTGGAAGTACGCTCGTG  
CGAATTCTGAAGGATAATTTTTACAAAGGACCTCAATGGGCGTGGACATTGTGTTTC  
TCACTGATCTTCTCGTACTTCTGCTTCTTGGTTCCCGCTTTCAGTCCTTGCCCATGGAA  
GACTGCCTCTCAGGAAGTACATGAGCACATATCCAAGAGATTCCAAATCATCTCGTC  
TGCTTTGCTCAATACCAAGATGAGTGTTGATGCTTGCATACCGAGCAGTCCCTGTCA  
GATTTTTGTTCTCCCTGTAGGGAATATGCTGATGCGTGGAAGGGTCGCGGTACTTCTT  
GGCAAGACCAAAAATCAATAATGTAGACCTGGTTTGCTCGCCTACCAAGCCCCATTAG  
AAAATTATCAGGCTTGATGTCTCTATGAAGAAAGCTTTTCGCATGCACATACTCCAC  
TCTGTTGATCAGCTGGTCAGCAAGCATGAGAACAGTCTTTAAAGAGAACTTCCGGCT  
GCAGAAGTTGAAAAGGTCTTCGAGACTTGGCCCCAACAGATCCAGAACCAAGACAT  
TGTAGTCTCCTTCTATCCCGAACCATCCTCGTGC



## FIGURE 1G

Nucleotide sequence of the partial CK-3 from *Physcomitrella patens* (SEQ ID NO:7)

CGGTGGGGCGCTCCCCAATATTTTATCCCCGGGGCTGCAGGGAATCCGGCGACCAGT  
NTTTGAAGGTGTCAACGCCGTGAATAGTGAGCGTTGCGTTATGAAGATTTTGAAGCC  
AGTAAAGAAAAAAAAGATCAAAAGAGAGATCAAGATTCTGCAAACCTTTGTGGAG  
GGCCCAACATTGTGAAGCTTCTGGACATTGTCCGTGATCAGCAATCGAAGACACCCA  
GCCTAATTTTTTGAGTATGTGAACAATACTGATTTCAAAGTGCTCTACCCCACTCTTAC  
AGACTTTGATATCCGATACTACATTCATGAGCTGCTCAAGGCTTTGGACTATTGCCA  
TTCTCAAGGGATTATGCACAGGGATGTGAAGCCACACAACGTGATGATTGACCATG  
AGCAGCGGAAGCTTAGGCTTATTGACTGGGGACTTGCCGAATTCTATCATCCTGGCA  
AAGAGTATAATGTGCGTGTTGCCTCTAGGTACTTCAAGGGTCCTGAGCTGCTGGTTG  
ATCTTCAAGATTATGATTACTCTCTCGACATGTGGAGCTCTGGGGTGATGTTTGCCG  
GCATGATATTTTCGGAAGGAGCCATTCTTTTATGGGCATGACANTTCATGATCAACTT  
GGTGAAGATCGCTAAGGTGTTGGGAACTTGATGAATTGAATTCCTATCTAACAAATA  
CCGCTAAGTGGACCCCATTTGGAGCACCTGGTGGGGG

## FIGURE 1H

Nucleotide sequence of the partial MPK-2 from *Physcomitrella patens* (SEQ ID NO:8)

GCACGAGGAACTAACGAATTGTCATTCTATAATCCAATAGTGTAATCACACGGGGG  
GGAATAAGTTGCAAAACCATACAACGCCGGGATAGCGTTGTAGCCACCTAAAGAAT  
TGAGAGTAGGCCTTACAACCTGAGATGAAGTGTGAAGTGGTACTGCACCATATCATC  
AGGACCTAAGCTGCAATCCAGAGCCTCCCTCCAAATGAGATCCCTGATAGGCTCCTC  
CGAGATAGAGGGCTCCTCGAAGCCAACTCGAAGGGAGATACCGAGCCAGGCTCAT  
CGTTGATGTCATGAAGTGAAGCTTAAATAAGGGTGCGCCAAGGCAGCTTCCACTGTG  
ATTCTTTTCGCTGGATCAAAGACCAGCATCTTTTCAACAAGATCAAGAGCAGAACGA  
TTAATGCCTCTGAACTTCTGGGTAAAGGGAATAGGCGACTGTCGAGGCAGGTGCTTG  
ATATACCGCCTAGCATTGTCGCTTCTCAAAAACCCAAGATCCCTATCTTCAGGAGTT  
CCGATGAGTTCTGTAATTAGGCGGAGCTGATGCACATAGTCTCTCCCAGGGAACAAC  
GCAGATCGGTAAAGCAACTCCATGAAGATGCACCCACAGACCAAATGTCAATAGC  
TGCAGTGTATGCTGAACAATTCAGGAGCAGCTCTGGAGCTCTGTACCACCTCGTTAC  
AACATACTCAGTCATGAAATCCGTTTCAGAGAGAGTGCGTGCCAAGCCAAAATCTG  
CGATTTTCAAATCGCAATTGGCATTGACGAGAAGGTTGGTGGGCTTCAAGTCCCGGT  
GCAAGACGTTGCGCCGAATGGATGTACTTCAAGCCCCGCAAGATTTGATACAGAAAA  
TACTGACAGTGGTCTTCTGTGAGAGCTTGATTTGAACGAATGATCTGGTGTAGGTCC  
GTATCCATCAACTCGTATACAATGTACACGTCGTTGAAATCTCGTGC

## FIGURE 1I

Nucleotide sequence of the partial MPK-3 from *Physcomitrella patens* (SEQ ID NO:9)

CGGCACCAGCCTCGCTGGAGACCGACCATCGAAGCACCTTAAGCTCGTTTTTCATTCG  
GCATTGCTTGCGAGCACTTCGACTTCCTAGAATTTCAATAGACCTAATGGAATCGCC  
ACTCCCTAATCTTTCCGGAGAGGCCTTATCGCCGACGGCAACTGCCGAAGACGAGAT  
TACTCAGATGATACTAAAAAGTGCCGCAAGGTCCGAATTAGGAATGTATGTTTCGAA  
GAGACAGGAATTCTATCTTCGAAGAGCGCGGAGGCGGCGTAAGTTTGCGTGGAAGC  
CGGTTTTGCAGAGCATCTCCGAGATGAAGCCTGTCATGGAATTCCACACTCCGATGG  
CTTACCGGGATAGTGGGTCTCCGCCGAAGAACGCCTCTACCCCATCCTTACCTGGCC  
CGAAGAACATTTACCGCCACGACAAGTGAGTGTCCCGCAAAGGAGCAGTCCTCCG  
CCGAAGAACGTCTCACCACCTCCCCAGCCCGGCATTTTGTAGCGCGGACTGCGATCG  
AAGTATTCTGCTGCATCTCAGCAAGTTCAACGAAATCGAGGGCAACGCGAAATCTCT  
TTTATATGGCGTAGTTTGTGTCTCCGACTGGACTCCTATCTATCCCCATCGAGATAAC  
TGATTCGGTGGATAATTTCTCCAAATTTTGGCTAACNCAAGAANCTCAAGGGCGAAT

## FIGURE 1J

Nucleotide sequence of the partial MPK-4 from *Physcomitrella patens* (SEQ ID NO:10)

GCACGAGGTTGGTGTAAGTTATTGATAGTGCTGTGCAATTCACAGTTTTGCTACTCC  
GGTAGGTCCGACCTCTTCAATTGTCAGTTTAAAACTCTAAAAACATTTGAGAAAAG  
TGTTGAAAAATCTCCGTGAGGAAATCCTTGTCGCAAGACGTGAAAAAAGAAGAA  
AGAAGATGGAAATATTGTTTTGGGTATCGAAGAAGTGTTTCGATGCTGTGCAATAAG  
GAAAGAAAAAGTGCAGGTAACATAAAAAGCTAGCATGGTGATGATAATATAAGACC  
CCGATTAACACACTTATGGATTGTTTCATGAGCTGCACGTTCTCAGCGACAAATGGG  
GCTCATTGAGAAAACCTCACTTTCTATAAGGTTGGGAAACGAGCGTTTTTTTTTTGA  
AGATGTTTTTTCCGTCAATCTGATTTGATATCGTTCTCAACTTGACCACATATGACTA  
TATAAGGAAAAGGCATTGAGAAAGTGGCGGATTGGCGAGGTAGTTCGACCATGCTT  
TTGGTAAAGTCCCTTGAAGTTCAGTGGTGGATCAGGCTTGTGGTAGTGACAGTCTCT  
GCACGCCATGCGAGGCTAACTTTAAGTTACAAAATCTTGCTCAAATGGTACTCTTCC  
TCGTTGTACTTTTGCAGGAACGGATGTTTAAGTAAATCAGTAGTTGATGGTCGTTCA  
CTGGGACATTTCCGGATGCAGGATTCAATAAAAGAACAAAATTCGGGGGAGAATTT  
GTCAGGGGATGCGGCTGCGGGGGGTTGATTAACTATACATTCCATGAGGATGAAGA  
AATTTTGCCAACCCTCTTCCATTCCAGCTGGTTTGTATGGGAAGGTACCCAACGCAC  
ACTCCAAAAGAGTCAATCCTAAACTCCATAGGTCACTGTCGTATGCATACGAACGCC  
CCTGAAGGCGTTCTGNCGACATATATGTGCAAGTCCCAACGAACGTGTCTCGCTGGG  
CCAAGGAATGAACCAACACAGCACTGACACCAAAATCAGATATTTTGACCTCACCC  
TTGTGATTGATGAGGAGGTTGGAGGGCTTTATATCACGATGTATGATGTGCCTGACT  
TGGTGTAGGTATTCCAATCCCTTCAGAACTTGACTAGCAATGACGGCCAAATACGGC  
TCAGGTATNTGCTTTCTGGTGC

## FIGURE 1K

Nucleotide sequence of the partial MPK-5 from *Physcomitrella patens* (SEQ ID NO:11)

TCCCCGGGCTGAGGAATTCGGCACGAGCGGTTGATCCTCACCCCTTGGGAAGGACCCT  
GGAATTGAGTAGCGTGCGGAAGCTGCATCGATCCGGAAGAGACGATGAGTAGGAGA  
GTGAGAAGGGGAGGTCTTCGCGTCGCGGTGCCGAAGCAAGAGACTCCCGTCAGCAA  
ATTTTTGACTGCCAGTGGAACCTTCCAGGATGATGATATCAAGCTCAACCACACCGG  
GCTTCGCGTCGTCTCTTCAGAACCTAACCTTCCTACGCAGACGCAGTCTAGCTCCCC  
AGATGGGCAACTGTCAATAGCAGACCTGGAGTTAGTGCGGTTCTTAGGAAAGGGTG  
CGGGTGGAACCGGTGCAGCTTGGTCCGGCACAAATGGACCAATGTCAATTATGCAC  
TGAAGGCGATACAAATGAATATCAACGAAACAGTGAGGAAGCAGATTGTTTCAGGAG  
CTGAAAATCAACCAAGTGACGCACCAGCAGTGCCCTTATATCGTGGAATGCTTCCAC  
TCCTTCTACCACAACGGCGTCATATCCATGATCCTAGAGTACATGGACAGGGGCTCG  
TTGTCCGACATTATTAAGCAACAAAAGCAGATACCTGAGCCGTATTTGGCCGTCATT  
GCTAGTC

## FIGURE 1L

Nucleotide sequence of the partial CPK-1 from *Physcomitrella patens* (SEQ ID NO:12)

GCACCAGCCGAGTCGGGCATTTTTCGTGCGGTGTTGAGGGCTGACCCGAGCTTTGAA  
GAAGCCCCTTGGCCTTCCATCTCTCCCGAAGCCAAGGATTTTCGTGAAGCGTCTCCTG  
AATAAGGATATGCGGAAACGCATGACTGCTGCACAAGCTTTAACTCATCCATGGATT  
CGAAGTAACAACGTGAAGATACCTCTGGATATCTTAGTGTACAGACTTGTGAGGAAT  
TATCTTCGTGCATCATCCATGAGAAAGGCTGCTTTGAAGGCCCTGTCAAAGACTTTA  
ACCGAAGACGAGACTTTTTATCTACGTACTCAATTTATGCTGCTAGAACCAAGTAAC  
AACGGTCGTGTTACTTTTGAGAATTTTCAGACAGGCACTGCTGAAAAATTCAACAGAG  
GCCATGAAAGAGTCACGGGTTTTTGAAATTCTGGAATCGATGGATGGTCTTCATTTC  
GCACCAGCCGAGTCGGGCATTTTTCGTGCGGTGTTGAGGGCTGACCCGAGCTTTGAA  
GAAGCCCCTTGGCCTTCCATCTCTCCCGAAGCCAAGGATTTTCGTGAAGCGTCTCCTG  
AATAAGGATATGCGGAAACGCATGACTGCTGCACAAGCTTTAACTCATCCATGGATT  
CGAAGTAACAACGTGAAGATACCTCTGGATATCTTAGTGTACAGACTTGTGAGGAAT  
TATCTTCGTGCATCATCCATGAGAAAGGCTGCTTTGAAGGCCCTGTCAAAGACTTTA  
ACCGAAGACGAGACTTTTTATCTACGTACTCAATTTATGCTGCTAGAACCAAGTAAC  
AACGGTCGTGTTACTTTTGAGAATTTTCAGACAGGCACTGCTGAAAAATTCAACAGAG  
GCCATGAAAGAGTCACGGGTTTTTGAAATTCTGGAATCGATGGATGGTCTTCATTTC  
AAGAAAATGGACTTTTCAGAGTTCTGTGCAGCGGCCATTAGTGTTCTCCAGTTAGAA  
G

## FIGURE 1M

Nucleotide sequence of the partial CPK-2 from *Physcomitrella patens* (SEQ ID NO:13)

GCACGAGCTCCTGCATCTCCCCCTCCTTCTCCTCCTCATCATTCTGGAGCCCAGCGAA  
CTGCGATCTGAGATTCCAACCTGGAAGGGCCTCGCGTAAGCACCGGAGCTCGTTTCT  
TACGCTTTTGCGCCTCGCGATATTTGTACATTGTTTCCTCTGGTTTTATTTCGATTCCGC  
CTCTGAAAATGTGAACGGGCTGCAAGCTTGGTTTTGGAGCAACGTTGGAGCATTGAA  
GGGTTGCGCTCGTCCCTGCCCATTCCTCGCTTCTGCTCTGGCCTATGTCATGACGACG  
TGAAGGAGAGGATTTGAGGGTTTTGCAAGTGATATAATCCTCCCCGAGGAGATTTCT  
GTGAGTTGATTAACCTGGATCAGCGACATGGGGAACACTAGTTCGAGGGGATCGAG  
GAAGTCCACTCGGCAGGTGAATCAGGGAGTCGGGTCTCAAGACACCCGAGAGAAGA  
ATGATAGCGTCAATCCAAAGACGAGACAGGGTGGTAGCGTTGGCGCAAACAACATAT  
GGCGGAAAGCACAAGCAGTGGTGCTCAGGCCGGAGAACGATCCACCTCTGCGCCCG  
CTGCTCTGCCGAGGCCGAAGCCAGCATCGAGGTCAGTATCCGGTGTTTTGGGTAAGC  
CGCTGTCAGATATTCGTCAATCTTACATCCTGGGACGGGAGCTTGGCCGAGGGCAGT  
TCGGAGTGACTTACTTGTGTACTGACAAGATGACGAATGAGGCGTACGCGTGCAAG  
AGCATCGCCAAACGGAAACTGACCAGTAAGGAGGATATCGAGGATGTTAAGCGGGA  
GGTTCAGATTATGCATCACCTGTCGGGGACACCCAATATCGTGGTGTTAAAGGATGT  
GTTTCGAGGACAAGCATTCCGTGCATCTTGTGATGGAGCTCTGTGCAGGTGGCGAGCT  
CTTCGATCGCATCATTGCCAAGGGGCATTACAGTGAGCGCGCCGCTGCCGATATGTG  
CAGAGTCATCGTCAATGTGGTGCACAGATGCCACTCATTAGGGGTCTTCCATCGGGA  
TCTCAAGCCAGAGAATTTTCTGTTGGCCAGCAAGGCTGAGGATGCGCCTCTGAAGGC  
CACAGACTTCGGTCTGTCAACTTTCTTTAAGCCAGGAGATGTGTTCCAGGATATTGTT  
GGAAGTGCGTATTACGTGGCCCCCTGAAGTTTTGAAGAGAAGTTATGGTCCTGAGCTG

[illegible]

ATGTTTGGAGTGCAGGCGTGATTGTGTACATTCTGCTGTGTGGTGTACCCCCCTTCTG  
GGCTGAAACTGAGCAGGGTATCTTTGACGCTGTGCTCAAAGGGCACATAGACTTCG  
AGAACGAGTCCATGGCCGAAAATCTCCAACGGGGCTAAGGATTTGGTGAGGAAAAT  
GCTAAACCCTAACGTGAANAT



## FIGURE 2A

Nucleotide sequence of the full-length PK-6 from *Physcomitrella patens* (SEQ ID NO:14)

ATCCCGGGTGAGTATCACTTACGGTGGCGAGGGATGGCCTTTGGGGTAGGAGCTGG  
TATATGCGGAGTCCAACAGAAGCTTGTGCAGGACTCTTGAGTTGTGCGTGCGAGGGC  
TGAGTGCCGGAAAGGTATTTTCCGACGAAGAGTCAATGTGGGCGTGGACAAACGTT  
TGAAGAGATGGGTGTGGATATGAAGGCTCCGGCTAAGCAGTCGCTGGGAGTCGGAC  
TGCTCCTGTGCTCTGTAGTGATCCTCTCGGTGGTGAGCTCTGTGTATGGCCAAGTTCA  
GACAGATCCAGTGGATACTACAGGCTTAATTTCCATGTGGTATGACTTAAAACAGAG  
TCAATCTCTCACGGGGTGGACTCAAAATGCTTCTAACCCTTGTTGGGCAGCAGTGGTA  
CGGCGTTGTATGTGATGGCTCTTCTGTCACGGAAATCAAAATTGGAAGTCGGGGTTT  
GAATGGAAATTTTAATCCTTCGTA CTTTCAAACGCTTTTAAAAAGCTTCGAATTTTT  
GATGCTAGTAACAACAACATCGAAGGAAATATTCCTCAACAGTTTCCTACGTCTCTT  
ACTCAAATGATATTGAACAACAATAAATTGACCGGAGGTCTCCCACAGTTTGATCAA  
TTGGGCGCCTTGACAGTCGTAAACTTGAGCAACAACAATCTGACCGGCAACATGAA  
CCCCAACTATTTCAATGTGATCGTGAATGTGGAAACCTTCGATGTTTCCTATAACCA  
ACTTGAAGGCACTCTTCCCGACTCCATTCTAAACCTGGCCAAGCTTCGTTTCTTGAAT  
TTGCAGAACAATAAATTTAATGGTAAACTTCCCGACGATTTCTCTCGGCTGAAGAAT  
TTGCAGACTTTCAACATTGAGAACGATCAGTTCACGGGTAATTATCCATCAGGTTTA  
CCCAGTAATAGCAGGGTTGGAGGAAATCGTCTTACATTTCCCCCACCTCCAGCCCCC  
GGCACACCTGCTCCCAGGACTCCTTCTCCTTCAGGAACATCGAATGGATCATCGTCG  
CATCTCCCTCTAGGGGCGATCATTGGAATAGCCGCTGGTGGTGCTGTGCTGCTTTTAT  
TACTAGCACTCGGCATCTGTTTGTGTTGTCGTAAGCGGTCCAAGAAAGCATTGGGCG  
ATCCAGAGGCCACGACCAGCAGCCGAAGACCGTGGTTCACACCTCCCCTCTCCGCA

## FIGURE 2A Continued

AAGAGCCAGAGTGATCCCAGCAAGAGCATAGACAAAACGACGAAACGCAACATCT  
TTGGCAGCAGTAAGAGTGAGAAGAAAAGTTCAAAGCACAGAGTATTTGAGCCAGCT  
CCTCTTGACAAAGGAGCAGCCGACGAACCAGTGGTGAAGGCGTCTCCGCCCCGTCAA  
GGTACTGAAGGCTCCTCCTTCATTTAAGGGTATCAGCGGCCTGGGTGCTGGACATTC  
GAAAGCAACAATTGGCAAGGTGAACAAGAGCAATATTGCAGCCACCCCATTCTCTG  
TAGCGGATCTTCAGGCAGCCACAAACAGCTTCTCCCAGGATAATCTGATTGGAGAA  
GGGAGCATGGGTTCGCGTGTATCGTGCCGAGTTTCCCAACGGCCAGGTCTTGGCCGTG  
AAGAAGATCGACAGCAGCGCGTCGATGGTGCAGAATGAGGATGACTTCTTGAGTGT  
AGTAGACAGTTTGGCTCGCCTGCAGCATGCTAATACGGCTGAGCTTGTGGGTACTG  
TATTGAACATGACCAACGGCTGTTGGTGTACGAGTACGTGAGTCGTGGAACCCTGAA  
CGAATTGCTCCATTTCTCGGGTGAAAACACCAAGGCCCTGTCCTGGAATGTCCGCAT  
TAAGATTGCTTTGGGATCCGCGCGTGCTCTGGAGTACTTGCACGAAGTCTGTGCACC  
TCCCGTGGTTTACCACAACCTTCAAATCTGCCAATATTCTGCTAGACGATGAGCTCAA  
TCCTCATGTTTCGGACTGTGGACTAGCTGCCCTTGCACCATCTGGTTCTGAACGCCAG  
GTGTCGGCACAAATGTTGGGCTCTTTCGGTTACAGTGCCCCTGAGTACGCCATGTCT  
GGAACCTATACCGTGAAGAGTGACGTCTACAGCTTCGGTGTTGTAATGCTGGAGCTA  
CTCACTGGGCGCAAGTCTTTAGACAGCTCAAGACCACGATCCGAGCAATCTTTGGTA  
CGATGGGCCACACCTCAATTGCACGACATCGACGCCCTTGCACGAATGGTGGATCC  
GTCGTTGAAGGGCATCTACCCTGCTAAATCACTCTCTCGGTTTGCTGATATAGTCGCC  
CTTTGCGTCCAGCCGGAGCCCGAGTTCCGACCCCCGATGTCTGAAGTGGTGCAGGCA  
CTTGTAAGGCTGATGCAGCGTGCGAGTCTGAGCAAACGCAGATCGGAGTCCGCTGTT

[illegible]

GGAATTGAGTCGAACGAGCCATCTGAGACTTCACTTTGAGAGTACTGAAGCGCCCA  
CTAGCCTAATCGTGCATCTTTGGCCATCTCGTTTCTGAGTGGAACACAAGCTGGGTA  
TATTCTTTGGTGGTTAAGCAACATTTTGT CACAATTTGAACTTCAGCTGGAGAAGGG  
TCTGTAGTGTTGAAGAAAACGAATGCAAAGCGTTTCGGCGTGGATGTGCTTTGAGAA  
CTTACAAAACCTCATCAAGACTTTGAAGATCTTTGTATTGCATCGAATCCTTTCAATCA  
GTCTCGGGTAGGATCAGTTCCTCTGTATCGGATACCCTTTTCATCCTAACATGGGACC  
CTTTTAATCCAGAGGATGGAGTGCTTGGAATAGTGACCTTGGTTCGAGTTAACGC

## FIGURE 2B

Nucleotide sequence of the full-length PK-7 from *Physcomitrella patens* (SEQ ID NO:15)

ATCCCGGGAGTGGGTGGTTGGACTGTAAGGAGCTAGCGTTTTAGAGCTACAGTGCG  
GTTTGCTGTGTGAGTGAGTGAGTGAGTGAGTGCGTGAGTGAGGATGTCTGTTTCTGG  
TATGGACAACATATGAGAAGCTGGAGAAGGTAGGAGAGGGGACTTACGGAAAGGTG  
TATAAGGCCCGTGATAAACGCTCCGGGCAGCTGGTGGCGCTCAAGAAGACTAGGTT  
GGAGATGGAGGAAGAAGGCGTCCCTTCCACCGCTTTGCGCGAAGTTTCGTTGCTACA  
AATGCTCTCCACAGCATGTATATCGTCAGGCTACTTTGCGTGGAGCACGTCGAGAA  
AGGCAGCAAGCCCATGCTCTACTTGGTCTTTGAATATATGGACACTGATCTTAAGAA  
GTATATTGACTTGCACGGTCGTGGTCCGAGCGGGAAGCCTCTGCCTCCCAAAGTGGT  
CCAGAGTTTCATGTATCAATTGTGCACAGGGCTTGCCCACTGTCATGGCCACGGAGT  
AATGCACAGGGATCTGAAACCCAGAAATTTGCTCGTCGACAAGCAAACCCGTCGTC  
TTAAGATTGCCGACCTTGGTCTCGGTGCGGCATTCACAGTGCCAATGAAGAGTTACA  
CACACGAGATTGTTACTCTATGGTACCGAGCTCCTGAAGTTCTTCTTGGAGCGACCC  
ACTACTCTCTACCTGTGGATATCTGGTCTGTTGGGTGCATCTTCGCTGAACTCGTCCG  
GAAAATGCCGCTCTTCACTGGAGACTCCGAACCTCAGCAGCTTCTTCACATCTTCAG  
GTTGCTTGGCACCCCGAATGAGACAATCTGGCCTGGTGTAGCCAGCACCGTGATTG  
GCACGAGTTTCTCAATGGAGACCACAAGATCTGTCCCTTGCTGTTCCCGGACTCAG  
CGCGGTTGGCTTAGACCTTCTCGCCAAAATGTTGGTATTCGAGCCCTCAAAGAGAAT  
CTCTGCCAAAGCCGCCTTGAGCCATACTTATTTGCTGATGTTGATAAGACAGCAAC  
CTAAACACAACAGAACAATTCAAGAGAACCAGGTAACCTCTACCTGTCCAAGACGA  
AGGTTAACGC

## FIGURE 2C

Nucleotide sequence of the full-length PK-8 from *Physcomitrella patens* (SEQ ID NO:16)

ATCCCGGGCAACGAGAAGCATTTCGAGATGGCAGATGCGAAGGAGGAACTGGCGCTG  
CGCACGGAAATGCACTGGGCTGTGAGGAGTAACGACGTGGGGCTGTTAAGGACCAT  
TCTGAAGAAAGACAAGCAGCTCGTGAATGCTGCGGACTATGACAAGCGCACGCCCT  
TGCACATCGCCGCGTCCCTGGATTGTGTCCCTGTTGCTAAAGTCCTGCTTGCGGAAG  
GAGCAGAGTTGAATGCAAAAGACAGGTGGGGGAAATCTCCGAGAGGCGAGGCGGA  
GAGTGCAGGATACATGGAGATGGTAAAGCTGTTGAAGGATTACGGGGCTGAGTCAC  
ACGCAGGTGCCCCGAGGGGCCACGTTGAGAGTCTGATTCAGGTTGCCCCCTCCGTTGC  
CTTCTAACCGCGACTGGGAGATCGCTCCGTCGGAGATTGAACTTGATAACCAGCGAGC  
TCATCGGCAAAGGCGCCTTTGGAGAGATTTCGGAAGGCGCTTTGGCGCGGCACACCC  
GTCGCTGTGAAGACAATCAGACCTTCTCTGTCCAACGACAGAATGGTCATCAAGGAC  
TTCCAGCACGAGGTGCAATTGCTCGTAAAGGTTTCGGCACCCAAACATTGTGCAGTTC  
CTCGGGGCTGTTACCCGTCAAAGACCTCTCATGTTAGTCACCGAGTTTCTGGCAGGG  
GGCGATTTGCATCAGTTGCTGAGGAGCAACCCTAATTTGGCTCCTGACCGCATCGTG  
AAGTATGCCCTCGACATAGCTCGCGGCATGTCTTACCTTCACAATCGGAGCAAGCCC  
ATCATCCACCGCGATCTCAAACCCCGAAACATCATAGTGGACGAAGAGCATGAGCT  
GAAGGTCGGCGACTTCGGACTGAGCAAGCTGATCGACGTAAAGCTTATGCATGATG  
TGTACAAGATGACGGGGGGGACTGGGAGTTACAGATACATGGCGCCTGAGGTCTTC  
GAACATCAACCCTACGACAAATCCGTCGACGTGTTTTCTTTGGAATGATATTATAT  
GAGATGTTTGAAGGCGTCGCTCCGTTTGAGGACAAGGATGCATACGACGCTGCCAC  
ACTAGTTGCTAGAGACGATAAGCGGCCAGAGATGAGAGCCCAAACGTATCCCCCAC  
AAATGAAGGCATTGATCGAGGATTGCTGGTCACCGTATACCCCGAAGCGACCACCTT

[illegible]

TCGTCGAAATCGTCAAAAACTCGAGGTAATGTATGAGGATTGCTTATTGAGATTGC  
CCAAAGACCGTCGTCATCTCCGCGACATCTTGCATCTTCGACGCAATCCTGCAGACT  
CGTGATTGATCGGGCCAACCTTCGAGCTGATCAATCTAAGTAGTCAATGCCTTACTG  
TGTCAAATTCAGCCTCCGCCGACAGATTGGCTATGGTTCAAGTGATTGGATTCTCTG  
CTTCTCCAGAGCCAGAAACGACCCCCGTGCAATTTCTTCTCCGACGACCACATTGCG  
ACATGAAGCACCAGACTTTGGATGTAGAAGGCATGGTCTACATGCTTTGCTGTGAGC  
CTTGACGTCTCGCAGGTTGATCTCTTTAACCAGCTTCTAGCCTTTCGCAATGGCTGC  
ATCACTTAAGAAATCACCGAGTATCGTGATGCTCGTTAACGC

## FIGURE 2D

Nucleotide sequence of the full-length PK-9 from *Physcomitrella patens* (SEQ ID NO:17)

aTCCCGGGCTGTGATGTCGGTGTGGTGCTCTGCAAGAAATCAGATGACGTCATAAGC  
ATGAAAAGGTACCAGAGACGTAAAGTTCAGAGACTCGGTCGGGAGGGCCAAGTCCT  
ATTGGAGAGAACTCTTTTCAAGCAACTGAGGCCTTCCCCATTCTGTGCCGCATCTCTT  
GGCCACCCCTATTGACAGTGACAATGTGGCACTCGTTCTTAATTGTGTGTTAGCTGG  
GCCTCTAGAACTTCTACTTCGGTCACCTTTAGACGAGAACTCAGCTCGTTTTCTGGTC  
GCCAACGTGGTATTAGCCGTCGAACTTCTGCACAAGGATGGCGTTGTATATCGTGGC  
ATCTCTCCCGATGTTCTTATGATAGATCGGAAAGGACGACTTCAGCTGGTTGATTTTC  
GGTTTGCAAAGCAAATGTTCGGATGAGCGCACTTTCACAGTCTGTGGCATGGCTGATT  
TCTTAGCACCCGAGATCATTCAAGGACAAGGTCATGGCCTGGCTTCTGACTGGTGGG  
CGGTAGGTGTGTTAATGTACTTCATGTTGCAAACCTGAGCTTCCATTTGGATCATGGC  
GGGACAACGAGCTTGAAATTTTTTGGTAGAATAGCCCGTCGGCAGCTTACGTTTCCTT  
CAAGTTTCAGCCCTGAAGCGGTTGACCTCATTGACAAGCTGCTGGTGGTGGACCCAA  
CCAAGAGACTGGGCTGTGACAGCCATGGATCGCTTGCCATAAGGGAACATCCTTGG  
TTCCGAGGTATAAACTGGGACAAGCACCTCGATTGCAGTGTGGAAGTTCCTTCAGAG  
ATCATGACACGCCTTCAGTTGGCCATAGACTTTCTTCCCGTGGATGATAGTTATCAA  
GTGTTTGATCTCCAACCCGATGAAGACGATCCACCATGGCTTGATGGCTGGTGATAG  
CTTGATGGCTCGTAGATCCCCCTTCTCCAAGCATCAATGGCACAGTACCGAATGGCT  
ATAACAGAAGATGCACATTAAGTGCTCCATGAACAGATACCGTAGCGCTTAGGATTT  
TTCGGTCGTCACAAATGACGGCTCTCTTGTGAGGTTTGAATGTTGTGTACCCGATG  
ATCTCTACTGGCACAAACCTCCAGGCTGAATCTTAAGGCCAGCTGTTTTAGGTGAGA  
CGTTTACCTTGGTTCGAACTCACGCTCGTGTTGTTAAGCGCGAGTCGATGATGTATG

[illegible]

AAATGACGGTGTTCCCTGAAAGTCTTGAAAGGCAATCAATTCGCTTATGTGTGTCCC  
TTCCATGTGGTCATTAGGGAAGGGAACCGCTGCACTAGTCAGTAAACGAACATGGC  
TTCAATTGTATAGCATAGCGGTAGAGGTTTCGTACGAAATGTGGTTGCAGTCGGTGA  
TTATAGGCGCATTTCTCTGAACATGCACGAGAATCGTGCTCCTGAGTCTCCATCATTC  
AGTGGTGCGAGCTCGC



## FIGURE 2E

Nucleotide sequence of the full-length CK-1 from *Physcomitrella patens* (SEQ ID NO:18)

ATCCCGGGCTCACGTAGTGAAGTCTGTCTGAATTTTAGGGGATGAGAGGTAG  
ATTTGAAGAATACTGGTGTCTAATTTTCTGTTAATTTTTCACCCTTGAGGTAGCTCAT  
GGATTTGGGAGGTGATCGCATGAGAGCTCCTCAGAGGCAGTCTCGAGAATATCAAT  
ATAGATCATTGGACGTCTTCACAGAGCAGCACGAGCAGTTGCAAAAGCAGCAGCAG  
CAAGATGAGTATCAGAGAACAGAATTGAAGCTCGAGACACTGCCAAAAATGTTAAG  
CAATGCGACCGTGTTCATCTTCCCCTCGAAGCAGTCCGGATGGACGTAGACTACGTAC  
AGTCGCGAATAAGTATGCTGTGGAAGGTATGGTTGGGAGTGGCGCATTCTGCAAGG  
TGTATCAGGGCTCCGATTTGACGAACCACGAGGTTGTGGGCATCAAGCTGGAGGAT  
ACGAGAACTGAGCACGCTCAGTTAATGCACGAGTCGCGCTTGTACAACATATTGCG  
GGGTGGGAAGGGAGTGCCCAACATGAGATGGTTCGGAAAAGAGCAAGACTACAAT  
GTGATGGTGCTAGACCTATTGGGGCCGAACCTGTTGCACCTCTTTAAGGTGTGTGGG  
CTAAGGTTTTTCGTTGAAGACCGTGATTATGCTCGGTTACCAAATGATTGACCGGGTG  
GAATACGTGCATTCTCGAGGGCTCGTTCACCGTGACCTGAAGCCGGATAACTTCCTC  
ATGGGCTGCGGTTCGGCAAGGAAACCAAGTGTTTCATTATAGATTTTGGCTTGGCAAAG  
GAGTACATGGACCCGGCAACACGAAGGCATATCCCTTACCGAGATAGGAAGAGCTT  
CACAGGGACGGCACGGTACGCTAGTAGGAATCAGCACAGAGGAATCGAGCACAGT  
AGAAGAGATGACATAGAATCACTTGGTTACATTCTTATGTACTTTCTAAGAGGCAAT  
TTGCCATGGCAAGGGAAGGGCGGGCAACGCCTCACTGACCAGAAGCAACACGAGTA  
CATGCACAACAAAATCAAGATGAACACCACTGTGGAGGAGCTTTGTGATGGGTATC  
CCAGTCAATTTGCCGACTTTTTGCACCACGCGCGAAGTCTAGGTTTCTACGAGCAGC  
CTGACTACTGTTACCTCCGAAGCTTGTTCCGTGATCTTTTCATTCAGAAAAAATTCCA

## FIGURE 2E Continued

GCTCGACCATGTGTACGACTGGACTGTGTATACTCAACTCCCCCAGAATGGCTCTCT  
GCAATCAGTGCGCAGCCAGAATTCCGCTGCTTCGTCCCATTGCAAAATCGACCTTC  
GAATGTATCATATTGTCCACCCTTGACCAAGTCGGAGTTCCGTCGTGAGGTTGTTGC  
GGCGAATTAGGGCTTACGTTGGGAGGACTAGTGGTTCATCCTCTGCTCTGGTACTAA  
AATAGCACAAGGTTGCTTACTGTTTCCCTCTCTCAAGTCTTACATGATTGTGAATGGG  
GGTTTATGGAGTTGAGGATGAGGCAACTAAGCAGAGTGTAGGAAAAGAGTTGTAGA  
CTCTCTAGTGTGTAGTGTGTAAATCAAGGCTTCTAGCATTGTGTCGGTAGCTTGTATG  
GATCAGACTAGAAATGACTTTATCCATTACAAGAATTTTACTCGGAAAGCCCATGA  
CGGTGATGATTTCAATACGTTGCACAAGCAACTTTCTTCTGTAATTGAAATAGAGGA  
TCTGGTCTGAGTATGAGAAGATGGGCATGTTAACGC

## FIGURE 2F

Nucleotide sequence of the full-length CK-2 from *Physcomitrella patens* (SEQ ID NO:19)

ATCCCGGGTTGTCGAGGACGGAGAGAGAAGAGAGAGAGAGAGAGAGAGAGAGGTG  
TTGTTTAGGGGAGGCATGCGGGAGCAGGATTGGTGTAAAGTTCGTAAGGAGAAGGG  
AGTACATGCAAGTGCGTGCTTGTCGGATATCGGACAGCTGGATTTGTAAATAAGCGG  
AGAGGAGGGTTCGGTAATCAGGGGCGTACATCGATGGAGCCGCGTGTGGGAAACAA  
GTATCGGCTGGGACGGAAAATTGGGAGCGGTTCCCTTTGGGGAGATCTATCTTGGGAC  
CAATGTTTCAGACCAATGAGGAGGTCGGAATAAAGCTGGAAAGCATCAAGACGAAGC  
ATCCACAATTGCTGTACGAGTCCAAGCTCTACCGGATACTACAAGGAGGAACTGGG  
ATTCCCAATATCAGATGGTTCGGGATAGAAGGAGACTACAATGTCTTGGTTCTGGAT  
CTGTTGGGGCCAAGTCTCGAAGACCTTTTCAACTTCTGCAGCCGGAAGTTCTCTTTA  
AAGACTGTTCTCATGCTTGCTGACCAGCTGATCAACAGAGTGGAGTATGTGCATGCG  
AAAAGCTTTCTTCATAGAGACATCAAGCCTGATAATTTTCTAATGGGGCTTGGTAGG  
CGAGCAAACCAGGTCTACATTATTGATTTTGGTCTTGCCAAGAAGTACCGCGACCCT  
TCCACGCATCAGCATATTCCCTACAGGGAGAACAAAAATCTGACAGGGACTGCTCG  
GTATGCAAGCATCAACACTCATCTTGGTATTGAGCAAAGCAGACGAGATGATTTGG  
AATCTCTTGGATATGTGCTCATGTACTTCCTGAGAGGCAGTCTTCCATGGCAAGGAC  
TGAAAGCGGGAACCAAGAAGCAGAAGTACGAGAAGATCAGTGAGAAAAAATGTC  
CACGCCCATTGAGGTCCTTTGTAAAAATTATCCTTCAGAATTCGCCTCGTACTTCCAC  
TACTGCCGGTCCTTGCGTTTTGATGACAAACCCGACTATGCATATTTGAAAAGAATC  
TTCCGTGACCTCTTTATTCGTGAGGGTTTTCAATTTGACTACGTTTTTGACTGGACAA  
TTCTGAAGTACCAGCAGTCACAAATTTCCGGTGGCAGTTCAACTCGACTGGGTGCTT  
CTGCAGGGCAAACCAGTGGTGCACTTGGAAGTGGGGCTACAGGAAGCCGAGACCTG

## FIGURE 2F Continued

CAGCGGCCACCGAACCAATGGATCCTTCTCGGCGCAGGCTTCCTGGAGGAGCAAA  
TGGCTCCGGGGTCGCAAATGCTTTGGACTCATCTAAGCACAAAAGTCCTGGACTTGA  
TGAATCTGCTAAGGATTCTGCTCTTGCTGTTGTGTCAGAACCAGAGCGCATGCATAC  
ATCTTCGTATGCAACTCGGGGGGGTTCTTCCTCCAGGCGAGCTGTCCTATCTAGCAG  
CAGGCCCTCAGGGGCATCAGCAGAAGTCGTAGATTCTCTCGAACAGGGAGCAGTA  
AGCTTGGTCCCACCAGCTTACGGTCGTCAGCAGGGATGCAGAGGAGCTCTCCAGTTA  
CTTCGGACCCAAAGCGGATATCTAGCCGCCATCCACAACCGCCATCTGCCAACTTGA  
GGATTACGAAGCCGCTATCAAGGGAGTTGAATCACTTTCTGTTGAGGTGGATCAAA  
GCCGTTATAAGTAGGCCCAGGCTTGTGGTTATATAGCCGGGCTCTGTCTTCTATCAA  
ACCCTCTTGTTATGTAGATGAGAGTTGCTCTACATTTGGCAACAGCCTGATTGAGGG  
GAAAACGGTGGTTCTGTCCTACAATGGTGCTAAGACTACAGGTCTCTCATACTTAGG  
AATGAATGGATCTCTATCTTGTTACCATCAAACCATTTGTCAGTGCTTTGTGTGGTAGC  
TCTCTGCCATACGATTCCTAAGGTAAACGC

## FIGURE 2G

Nucleotide sequence of the full-length CK-3 from *Physcomitrella patens* (SEQ ID NO:20)

GCGTTAACGGGAGGAAGGTCGGGGGAAGAGACGCTTGAGGCTGCTGAAAGGGGAT  
TCACTCAGCGTCCCCACCCATTCGTCAATCTGGCGCAGAAGATCGGAAAATCGGTCC  
GACGGCCAGGTGTTATGTCCAAGGCCCGGGTTTACACAGATGTGAATGTCCAACGTC  
CGAAAGATTATTGGGACTACGAGGCCCTCACCGTCCAATGGGGGGACCAAGACGAT  
TACGAGGTAGTGCGTAAGGTGGGGCGAGGGAAATACAGTGAGGTTTTTGAAGGTGT  
CAACGCCGTGAATAGTGAGCGTTGCGTTATGAAGATTTTGAAGCCAGTAAAGAAAA  
AAAAGATCAAAAGAGAGATCAAGATTCTGCAAACCTTTGTGGAGGGCCCAACATT  
GTGAAGCTTCTGGACATTGTCCGTGATCAGCAATCGAAGACACCCAGCCTAATTTTT  
GAGTATGTGAACAATACTGATTTCAAAGTGCTCTACCCCACTCTTACAGACTTTGAT  
ATCCGATACTACATTCATGAGCTGCTCAAGGCTTTGGACTATTGCCATTCTCAAGGG  
ATTATGCACAGGGATGTGAAGCCACACAACGTGATGATTGACCATGAGCAGCGGAA  
GCTTAGGCTTATTGACTGGGGACTTGCCGAATTCTATCATCCTGGCAAAGAGTATAA  
TGTGCGTGTTGCCTCTAGGTACTTCAAGGGTCCTGAGCTGCTGGTTGATCTTCAAGAT  
TATGATTACTCTCTCGACATGTGGAGCTTGGGGTGATGTTTGCCGGCATGATATTTT  
GGAAGGAGCCATTCTTTTATGGGCATGACAATTATGATCAACTTGTGAAGATTGCTA  
AGGTGTTGGGAAGTGAATTGAATTCCTATCTAAACAAATACCGCCTAGAGCTGG  
ACCCCCATTTGGAAGCACTGGTTGGCAGGCATAGCAGGAAACCTTGGTCAAAGTTC  
ATCAATGCTGATAATCAGCGTCTGGTTGTTCCAGAGGCTGTGGATTTTTTGGATAAG  
CTTCTACGCTACGATCATCAAGACAGGCTGACTGCGAAGGAAGCTATGGCACATCC  
CTATTTTTATCCCGTGAAGGTGTCGGAGGTTAGCAACCGTCGCAGTGCTTGATATGA

## FIGURE 2G Continued

ATTGATATATCTCATATGGGCTTTCTTGTGATTACGTCCCACCCGGCTACCAGGTTTC  
TCAGTTGTGCGAAGCGCTGAGCTCGC

## FIGURE 2H

Nucleotide sequence of the full-length MPK-2 from *Physcomitrella patens* (SEQ ID NO:21)

ATCCCGGGCGAGCCATGGCGCCACTTGCTTCGGCGAATGGGACTGTTTGACTTCTTC  
GCTTCGCCCCCGCCTCGCCCTTCACCCTCCTCTGTTCTTGTCACAGCCTCCTCCTCCG  
TCTCTGTCTGTTGGCTGGGTAAAGTTTTGGGAGTGAGGAGGACGTGGTCATGGAAGAA  
GAGCCCCCTCTTTTGTAGTGGACTGTCGGTAAATTGGACCTGGAGCCTGCCGGCTC  
ATCGCGTTTGCTTAGATTGTGGGCGGGTGCTGTTGAAATTCCTTGAAGTTGCTACTGG  
TCGGAAACGCTCGAATTGCGACTTTGATTGAAGGTCTGGTTGTTGCTGCGGTCGGGA  
TCTTACTCAGTCTCTTCAATAGGACCTCTGAAGCAGTATGGAGACTAGCAGTGGAAC  
TCCAGAATTGAAAGTTATAAGTACTCCGACCTACGGAGGTCATTACGTGAAATATGT  
TGTGGCGGGAAGTATTCGAAGTCACCGCGAGGTACAAGCCACCACTTCGTCCGAT  
TGGGCGCGGAGCTTATGGAATCGTCTGTTCACTCTTTGATACCGTTACGGGTGAGGA  
GGTGGCGGTCAAAAAGATTGGAAACGCCTTCGACAACAGGATCGATGCGAAGCGAA  
CACTGCGTGAAATAAACTCCTCCGGCATATGGATCATGAAAACGTCGTTGCCATTA  
CAGACATCATTCGTCCCCCACTAGGGAGAATTTCAACGACGTGTACATTGTATACG  
AGTTGATGGATACGGACCTACACCAGATCATTCGTTCAAATCAAGCTCTCACAGAAG  
ACCACTGTCAGTATTTTCTGTATCAAATCTTGCGGGGCTTGAAGTACATCCATTCGGC  
GAACGTCTTGCAACGGGACTTGAAGCCACCAACCTTCTCGTCAATGCCAATTGCGA  
TTTGAAAATCGCAGATTTTGGCTTGGCACGCACTCTCTCTGAAACGGATTTTCATGAC  
TGAGTATGTTGTAACGAGGTGGTACAGAGCTCCAGAGCTGCTCCTGAATTGTTTCAGC  
ATACACTGCAGCTATTGACATTTGGTCTGTGGGGTGTCATCTTCATGGAGTTGCTTAA  
CCGATCTGCGTTGTTCCCTGGGAGAGACTATGTGCATCAGCTCCGCCTAATTACAGA  
ACTCATCGGAACCTCCTGAAGATAGGGATCTTGGGTTTTTGAGAAGCGACAATGCTAG

100

Year	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	



## FIGURE 2I

Nucleotide sequence of the full-length MPK-3 from *Physcomitrella patens* (SEQ ID NO:22)

ATCCCGGGCTTGTATTGGCTCGGATAATTTATGTTGACAATTGATTTGTGAGGCTTCG  
TATTGAGTCAGCGAGCAGGCTGAGAGTTCGGCAGCGAAGTTACACTCGACCTGGCT  
GAAATTTGGAATTGAAGCGCGTGAAGCTTCATCTGTGATTTTGGAGGTTGTTTGACT  
GATGAGAAGAGGTCTCTGAGCTGAGAATGTTTGCAATTTAGGGGCACCACCGGTTTG  
TTGGAGTCCCTTGCCACTTATTACAATTGTTGGTTTACAAGCTCGACGAGTTTCAATC  
GAACGTAGAGTTTTAGTCGGGTCGAGGATCTATGTATCCGCTCAGCGGAGAAGAGA  
GCCTGATGTTGCCGAAGCGATCGTGTGGGATTTGACTAGAAAGAGGTGGACCGCAT  
CAGAACTATTTATTCCTTGTGAGGGAAGGATCGAGGTTCCAATGGGTCTCACTCCGT  
TTTCTTGTGTACGGTTCAAGGTTATGTCCGGGTGGTCTACCCCGACGGCCACGTCG  
AGAATCTGAGCAAATCTTGTAGCGTGCACGATCTTCTTCTGGGTAATCCAGACTACT  
ATGTCTGCGGTAGCACCCCTTACACAATCACCAATCGTATGGCAGCGGAAGAGGTG  
CTCGAGTATGGGGTGACCTACTTCGTTTGCGCAACGCCAAATGCCCAACCTTTCTTA  
GAACGTCAGCCGAAGGTAGTACATCGAGGATCCAAGATTTTGCCACGATTTTCCAAA  
CATGGGGTCCATGTGCGGGAGTTGCGAAGCCCGACGCATGGGAGCCAACAGTCACG  
GAAGGTTTTTGATTATCATTACAGTAACGATGCAGCAGCTTGAATCCATACGAAACGA  
GGGCCAGAGCCTCACCTCGCTGGAGACCGACCATCGAAGCACCTTAAGCTCGTTTT  
CATTCGGCATTGCTTGCGAGCACTTCGACTTCCTAGAATTTCAATAGACCTAATGGA  
ATCGCCACTCCCTAATCTTTCCGGAGAGGCCTTATCGCCGACGGCAACTGCCAAAGA  
CGAGATTACTCAGATGATACTAAAAAGTGCCGCAAGGTCCGAATTAGGAATGTATG  
TTTCGAAGAGACAGGAATTCTATCTTCGAAGAGCGCGTAGGCGGCGTAAGTTTGCGT  
GGAAGCCGGTTTTGCAGAGCATCTCCGAGATGAAGCCTGTCATGGAATTCCCACTC

## FIGURE 2I Continued

CGATGGCTTACCGGGATAGTGGGTCTCCGCCGAAGAACGCCTCTACCCCATCCTTAC  
CTGGCCCGAAGAACATTTACCGCCACGACAAGTGAGTGTCCCGCAAAGGAGCAGT  
CCTCCGCCGAAGAACGTCTCACCACCTCCCCAGCCCGCATTGTAGCGCGGACTGCG  
TCGAAGTATTCTGCTGCATCTCAGCAAGTTCAACGAAATCGAGGCAACGCGAAATCT  
CTTTATATGGCGTAGTTTGTGTCTCGACTGAACTCCTATCTATTCCCCCATCGAGATA  
ACTGCATTCGTTGGATAAAATTTCTCCAACATTTTGTCTTTCATCCTCAAGCAGCTCC  
TCAATGGCCAGTAATATGTTACGACATTGTGCACAACTCCAATTACGTAGCGTTATT  
CTGTAACCCACGTTTCATCGAGGTATCAAGGAATGGCGCAGTAAGCACTGCTACTTTG  
TGCTTTGGTATCCCGTTGTGACGAGATGTCATGTCGCACCGTGCCTATCAGTGGGAT  
TTTCTTGAGCGCAGATCTTGCTTCCGCAGTTTGTTCATAACGTTTTGGTTTCGTAGGG  
GGCCTAGACGGTACTATCAAGCAATGAGAAGTGTGCTGGTGTGGATTTGACAGCAA  
TCTTTTGGAGGATTGTCTTTCCTATGTAGAACATAGCGAGGACACTTGCGCCTGGTG  
GGCACATCCCATAGAACATAGTGCTTCACTTCTGGGTTGTTCACTACTAGGATCATA  
TGACCTTCTCATCTATTTTCGGGCTTTGTTTCGAGCTCATGTACCATCGACTAGCGTC  
ACTTTGACTGCGGTGATAATCGTTTGTCAATTTAGTGGAGCTTTGTAGATGATAGAT  
GCCATTTGTACAGTAGCTTGGATGCTGTTTACAAGATAGCGGCAGCTAGAAGCCTTA  
AACCTTTAGCTACCATGTATTATTTAAACCTATATGAAGTGAACGGCTGTGCAGAT  
ATTGCCGTTAACGC

## FIGURE 2J

Nucleotide sequence of the full-length MPK-4 from *Physcomitrella patens* (SEQ ID NO:23)

ATCCCGGGCGGTCGAGTCGTATTAGGTGTTGTTTCATTGTAAGGGTTCGGAAGCACG  
GGGCACGGCGTATATAACGTTCCCCTTGAACGTTGATCTCACCTTTGGAAGACCTGA  
ATTGAGTAGCGTGCGGAAGCTGCATCGATCCGGAAGAGACGATGAGTAGGAGAGTG  
AGAAGGGGAGGTCTTCGCGTCGCGGTGCCGAAGCAAGAGACTCCCGTCAGCAAATT  
TTTGACTGCCAGTGGAACCTTCCAGGATGATGATATCAAGCTCAACCACACCGGGCT  
TCGCGTCGTCTCTTCAGAACCTAACCTTCCTACGCAGACGCAGTCTAGCTCCCCAGA  
TGGGCAACTGTCAATAGCAGACCTGGAGTTAGTGCGGTTCTTGGGAAAGGGTGCGG  
GTGGAACCGTGCAGCTTGTCCGGCACAAATGGACCAATGTCAATTATGCACTGAAG  
GCGATACAAATGAATATCAACGAAACAGTGAGGAAGCAGATTGTTTCAGGAGCTGAA  
AATCAACCAAGTGACGCACCAGCAGTGCCCTTATATCGTGGAATGCTTCCACTCCTT  
CTACCACAACGGCGTCATATCCATGATCCTAGAGTACATGGACAGGGGCTCGTTGTC  
CGACATTATTAAGCAACAAAAGCAGATACCTGAGCCGTATTTGGCCGTCATTGCTAG  
TCAAGTTCTGAAGGGATTGGAATACCTACACCAAGTCAGGCACATCATAACATCGTGA  
TATAAAGCCCTCCAACCTCCTCATCAATCACAAGGGTGAGGTCAAAATATCTGATTT  
TGGTGTCAGTGCTGTGTTGGTTTCATTCTTGGCCCAGCGAGACACGTTTCGTTGGGAC  
TTGCACATATATGTCGCCAGAACGCCTTCAGGGGCGTTTCGTATGCATACGACAGTGA  
CCTATGGAGTTTAGGATTGACTCTTTTGGAGTGTGCGTTGGGTACCTTCCCATACAA  
ACCAGCTGGAATGGAAGAGGGTTGGCAAAATTTCTTCATCCTCATGGAATGTATAGT  
TAATCAACCCCCCGCAGCCGCATCCCCTGACAAATTCTCCCCGAATTTTGTTCCTTTT  
ATTGAATCCTGCATCCGGAATGTCCCAGTGAACGACCATCAACTACTGATTTACTT  
AAACATCCGTTCTTGCAAAAGTACAACGAGGAAGAGTACCATTTGAGCAAGATTTT

[illegible][illegible]

## FIGURE 2K

Nucleotide sequence of the full-length MPK-5 from *Physcomitrella patens* (SEQ ID NO:24)

ATCCCGGGAGAGGCTGATCTGATGCTACAGTTTCGTGTGCAGCTAGTCTTTAGAGAT  
TCGGGCAACGCACTTGTTGAAGATCGGAACTTTCAAATCGGTCGAGTCGTATTAG  
GTGTTGTTTCATTGTAAGGGTTCGGAAGCACGGGGCACGGCGTATATACCGTTCCCC  
TTGAACGTTGATCTCACCTTTGGAAGACCTGAATTGAGTAGCGTGCGGAAGCTGCAT  
CGATCCGGAAGAGACGATGAGTAGGAGAGTGAGAAGGGGAGGTCTTCGCGTCGCG  
GTGCCGAAGCAAGAGACTCCCGTCAGCAAATTTTGGACTGCCAGTGGAAGTTTCCAG  
GATGATGATATCAAGCTCAACCACACCGGGCTTCGCGTCGTCTCTTCAGAACCTAAC  
CTTCCTACGCAGACGCAGTCTAGCTCCCCAGATGGGCAACTGTCAATAGCAGACCTG  
GAGTTAGTGCGGTTCTTAGGAAAGGGTGCGGGTGGAACCGTGCAGCTTGTCCGGCA  
CAAATGGACCAATGTCAATTATGCACTGAAGGCGATACAAATGAATATCAACGAAA  
CAGTGAGGAAGCAGATTGTTTCAGGAGCTGAAAATCAACCAAGTGACGCACCAGCAG  
TGCCCTTATATCGTGGAATGCTTCCACTCCTTCTACCACAACGGCGTCATATCCATGA  
TCCTAGAGTACATGGACAGGGGCTCGTTGTCCGACATTATTAAGCAACAAAAGCAG  
ATACCTGAGCCGTATCTGGCCGTCATTGCTAGTCAAGTTCTGAAGGGATTGGAATAC  
CTACACCAAGTCAGGCACATCATACTCGTGATATAAAGCCCTCCAACCTCCTCATC  
AATCACAAGGGTGAGGTCAAATATCTGATTTTGGTGTCAGTGCTGTGTTGGTTCAT  
TCCTTGGCCCAGCGAGACACGTTTCGTTGGGACTTGACATATATGTCGCCAGAACGC  
CTTCAGGGGCGTTTCGTATGCATACGACAGTGACCTATGGAGTTTAGGATTGACTCTT  
TTGGAGTGTGCGTTGGGTACCTTCCCATACAAACCAGCTGGAATGGAAGAGGGTTG  
GCAAAATTTCTTCATCCTCATGGAATGTATAGTTAATCAACCCCCCGCAGCCGCATC  
CCCTGACAAATTCTCCCCGAATTTTGTTCTTTTATTGAATCCTGCATCCGGAAATGT

[illegible]

CCCAGTGAACGACCATCAACTACTGATTTACTTAAACATCCGTTCCCTGCAAAAGTAC  
AACGAGGAAGAGTACCATTTGAGCAAGATTTTGTA ACTTAAAGTTAGCCTCGCATGG  
CGTGCAGAGACTGTCACTACCACAAGCCTGATCCACCACTGAACTTCAAGGGACTTT  
ACCAAAAGCATGGTCGAACTACCTCGCCAATCCGCCAGAGCTCA

## FIGURE 2L

Nucleotide sequence of the full-length CPK-1 from *Physcomitrella patens* (SEQ ID NO:25)

ATCCCGGGTGTAGGCGGGCGAGGTTTCGATGCAATGGGGCAGTGTTATGGAAAGTTT  
GATGATGGAGGCGAAGGGGAGGATTTGTTTGAGCGGCAGAAAGTGCAGGTTTCTAG  
GACGCCAAAGCATGGATCGTGGAGCAATAGCAACCGAGGGAGCTTCAACAATGGCG  
GGGGGGCCTCGCCTATGAGAGCCAAGACGTCGTTTCGGGAGCAGCCATCCGTCCCCG  
CGGCATCCCTCAGCTAGTCCGCTCCCTCACTACACGAGCTCCCCAGCGCCTTCGACC  
CCGCGACGGAACATTTTCAAAGGCCTTTTCCTCCTCCTTCTCCCGCGAAGCACATT  
CAGTCCAGTCTCGTGAAACGGCATGGCGCGAAGCCGAAAGAAGGAGGGGCGATCCC  
TGAGGCTGTCGATGGTGAGAAGCCCTTGGATAAGCATTTTCGGCTATCACAAGAACTT  
CGCTACTAAGTATGAGCTGGGGCATGAAGTCGGTCGCGGGCACTTCGGTCACACAT  
GTTACGCGAAAGTACGGAAGGGCGAGCATAAGGGACAAGCCGTGGCAGTGAAGAT  
AATCTCGAAAGCGAAGATGACGACTGCTATTGCGATCGAGGACGTGGGACGAGAAG  
TGAAAATTTTGAAGGCTCTGACGGGACACCAGAATTTGGTTCGATTCTACGATTCTT  
GCGAGGACCATCTAAATGTGTACATTGTTATGGAATTATGTGAAGGAGGTGAATTAT  
TGGATCGAATTTTGTCTCGGGGAGGGAAGTACTCGGAGGAAGACGCCAAGGTTGTT  
GTGCGGCAGATTTTGAGCGTTGTTGCGTTTTGTACCTGCAAGGCGTTGTTACCGA  
GATCTTAAGCCTGAGAATTTTCTGTTTACCACGAAGGATGAATATGCTCAGCTTAAG  
GCCATTGATTTTGGATTGTCAGATTTTCATCAAACCCGATGAAAGACTGAACGATATC  
GTTGGAAGCGCATACTACGTTGCGCCGGAGGTATTGCATAGGTTATATTCAATGGAA  
GCTGACGTATGGAGCATTGGAGTCATCACGTACATTTTGTTATGTGGTAGTCGACCG  
TTTTGGGCGCGGACCGAGTCGGGCATTTTTCGTGCGGTGTTGAGGGCTGACCCGAGC  
TTTGAAGAAGCCCCTTGGCCTTCCATCTCTCCCGAAGCCAAGGATTTTCGTGAAGCGT

## FIGURE 2L Continued

CTCCTGAATAAGGATATGCGGAAACGCATGACTGCTGCACAAGCTTTAACTCATCCA  
TGGATTCGAAGTAACAACGTGAAGATACCTCTGGATATCTTAGTGTACAGACTTGTG  
AGGAATTATCTTCGTGCATCATCCATGAGAAAGGCTGCTTTGAAGGCCCTGTCAAAG  
ACTTTAACCGAAGACGAGACTTTTTATCTACGTACTCAATTTATGCTGCTAGAACCA  
AGTAACAACGGTCGTGTTACTTTTGAGAATTTTCAGACAGGCACTGCTGAAAAATTCA  
ACAGAGGCCATGAAAGAGTCACGGGTTTTTGAAATTCTGGAATCGATGGATGGTCTT  
CATTTCAAGAAAATGGACTTTTCAGAGTTCTGTGCAGCGGCCATTAGTGTTCTCCAG  
TTAGAAGCCACAGAACGATGGGAGCAGCATGCTCGCGCAGCTTACGACATATTTGA  
GAAAGAGGGTAACCGAGTCATTTATCCTGATGAACTTGCGAAAGAGATGGGACTAG  
CACCAAATGTACCAGCCCAAGTGTTTCTAGATTGGATTAGACAGTCTGATGGTCGGC  
TGAGTTTCACTGGGTTACCAAGCTGCTACATGGAATTTCCAGCCGTGCTATCAAAA  
ATCTCCAGCAGTGATTCTTTGCATCGTACAGTTCGGAATGGAGTTTTTAAGCTCTTTT  
AGTTTCACTTCCGTCTTCAACTGCTGCTTCGCCTCGTCTCTGAGCTGTGATAGCGTAT  
CTCAAGCATATGCACAACTCGCATTTTTGCTGAAGTGATTTGTCACCTCACATTAGTC  
GGGCCTCTGGAACTTTCACTTATTTGGATTATTTATGTAGAAGTCCAGATCAAAAAG  
CGAAAAGGAATGGCTAGATATTGTCACAAGAAGTAACATAGTCAAATTCAGGAGCA  
CTTAAGCACACATTGAGTGCTTTTTATTGGAATTCTTAGATATGGAACCTGATGTTTCC  
AAGGGAAGGGTCTATGAGGCAGAGAGTGGAATGTATAGACTGGCATATGGTTAAGT  
GATCATTGGACTGCCGTTCTACTCCGGTTGTCGTTAACGC



## FIGURE 2M

Nucleotide sequence of the full-length CPK-2 from *Physcomitrella patens* (SEQ ID NO:26)

ATCCCGGGCGAACTGCGATCTGAGATTCCAACCTGGAAGGGCCTCGCGTAAGACCG  
GATCTCGTTTCTTACGCTTTTGCGCCTCGCGATATTTGTACATTGTTTCCTCTGGTTTT  
ATTCGATTCCGCCTCTGAAAATGTGAACGGGCTGCAAGCTTGGTTTTGGAGCAACGT  
TGGAGCATTGAAGGGTTGCGCTCGTCCCTGCCCATTCCTCGCTTCTGCTCTGGCCTAT  
GTCATGACGACGTGAAGGAGAGGATTTGAGGGTTTTGTAAGTGATATAATCCTCCCC  
GAGGAGATTTCTGTGAGTTGATTAACCTTGGATCAGCGACATGGGGAACACTAGTTCG  
AGGGGATCGAGGAAGTCCACTCGGCAGGTGAATCAGGGAGTCGGGTCTCAAGACAC  
CCGAGAGAAGAATGATAGCGTCAATCCAAAGACGAGACAGGGTGGTAGCGTTGGCG  
CAAACAACCTATGGCGGAAAGCCAAGCAGTGGTGCTCAGGCCGGAGAACGATCCACC  
TCTGCGCCCGCTGCTCTGCCGAGGCCGAAGCCAGCATCGAGGTCAGTATCCGGTGTT  
TTGGGTAAGCCGCTGTCAGATATTCGTCAATCTTACATCCTGGGACGGGAGCTTGGC  
CGAGGGCAGTTCGGAGTGACTTACTTGTGTACTGACAAGATGACGAATGAGGCGTA  
CGCGTGCAAGAGCATCGCCAAACGGAACTGACCAGTAAGGAGGATATCGAGGATG  
TTAAGCGGGAGGTTTCAGATTATGCATCACCTGTCTGGGGACACCCAATATCGTGGTGT  
TAAAGGATGTGTTTCGAGGACAAGCATTCCGTGCATCTTGTGATGGAGCTCTGTGCAG  
GTGGCGAGCTCTTCGATCGCATCATTGCCAAGGGGCATTACAGTGAGCGCGCCGCTG  
CCGATATGTGCAGAGTCATCGTCAATGTGGTGCACAGATGCCACTCATTAGGGGTCT  
TCCATCGGGATCTCAAGCCAGAGAATTTTCTGTTGGCCAGCAAGGCTGAGGATGCGC  
CTCTGAAGGCCACAGACTTCGGTCTGTCAACTTTCTTTAAGCCAGGAGATGTGTTCC  
AGGATATTGTTGGAAGTGCGTATTACGTGGCCCCTGAAGTTTTGAAGAGAAGTTATG  
GTCCTGAAGCTGATGTTTGGAGTGCAGGCGTGATTGTGTACATTCTGCTGTGTGGTG

## FIGURE 2M Continued

TACCCCCCTTCTGGGCTGAAACTGAGCAGGGTATCTTTGACGCTGTGCTCAAAGGGC  
ACATAGACTTCGAGAACGATCCATGGCCGAAAATCTCCAACGGGGCTAAGGATTTG  
GTGAGGAAAATGCTAAACCCTAACGTGAAGATACGTCTGACGGCACAGCAGGTGTT  
GAACCATCCATGGATGAAGGAAGATGGTGATGCTCCAGACGTGCCACTCGACAATG  
CGGTGTTGACCAGACTGAAAAATTTCTCAGCCGCCAACAAGATGAAAAAGCTGGCG  
CTGAAGGTGATTGCAGAGAGTCTGTCTGGAGGAAGAGATCGTGGGGTTGAGGGAGAT  
GTTCAAATCCATAGATACAGACAACAGCGGCACGGTGACGTTCGAGGAGCTTAAGG  
AAGGGTTGCTGAAGCAGGGCTCAAACTTAATGAATCGGACATCAGGAACTAATG  
GAAGCTGCAGATGTTCGATGGAAACGGCAAGATCGACTTCAACGAGTTCATATCGGC  
AACAAATGCACATGAACAAGACGGAGAAAGAGGATCACCTTTGGGCAGCATTTCATGC  
ATTTTCGACACGGACAATAGCGGGTATATCACCATCGACGAGCTTCAGGAAGCAATG  
GAGAAGAATGGAATGGGAGATCCTGAGACCATCCAAGAGATCATCAGCGAGGTGG  
ACACAGACAACGACGGAAGAATAGACTACGACGAGTTCGTAGCCATGATGCGCAAG  
GGCAATCCTGGCGCTGAAAACGGAGGAACGGTGAACAAGCCCAGACACAGGTAGT  
AGCTCCTGGTTGCCAATTTGACGACGGGTTTGGCAAGGCAACAGTAGTTGTTGTTAG  
CTTTCAGATTCAGGTTCGGTATTGTTTCATGCCCTCCTTTGTCTCGAACAATGGACTCT  
AGGCCTTTCCAATGGAAAAGCTATTCCAACAGGGTTTGCATAACGTGTAGTAGAATG  
AAAGCATTGCCTGGGGGGTGTACAGTGCCTGTGATCTTGTGGAGTTCTCGTAGGATG  
GCTTCGGTTGGATCTCGTTAACGC

### FIGURE 3A

Deduced amino acid sequence of PK-6 from *Physcomitrella patens* (SEQ ID NO:27)

MGVDMKAPAKQSLGVGLLLCSVVILSVVSSVYGQVQTDVPVDTTGLISMWYDLKQSQSL  
TGWTQNASNPCGQQWYGVVCDGSSVTEIKIGSRGLNGNFNPSYFQNAFKKLRIFDASN  
NNIEGNIPQQFPTSLTQMILNNNKLTTGGLPQFDQLGALTVVNLSNNNLTGNMNPNYFNV  
IVNVETFDVSYNQLEGTLPDSILNLAKLRFLNLQNNKFNGKLPDDFSRLKNLQTFNIEND  
QFTGNYPSGLPSNSRVGGNRLTFPPPPAPGTPAPRTPSPSGTSNGSSSHLPLGAIIGIAAGG  
AVLLLLLALGICLCCRKRSKKALGDPEATTSSRRPWFTPLSAKSQSDPSKSIDKTTKRNI  
FGSSKSEKKSSKHRVFEPAPLDKGAADPEVVKASPPVKVLKAPPSFKGISGLGAGHISKAT  
IGKVNKSNIAATPFSVADLQAATNSFSQDNLIGEGSMGRVYRAEFPNGQVLAVKKIDSS  
ASMVQNEDDFLSVVDSLARLQHANTAELVGYCIEHDQRLLVYEVVSRGTLNELLHFSG  
ENTKALSWNVRIKIALGSARALEYLHEVCAPPVVHHNFKSANILLDDELNPHVSDCGLA  
ALAPSGSERQVSAQMLGSFGYSAPEYAMSGTYTVKSDVYSFGVVMLELLTGRKSLDSS  
RPRSEQSLVRWATPQLHDIDALARMVDPSLKGIYPAKSLSRFADIVALCVQPEPEFRPPM  
SEVVQALVRLMQRASLSKRRSESAVGIESNEPSETSL\*

### FIGURE 3B

Deduced amino acid sequence of PK-7 from *Physcomitrella patens* (SEQ ID NO:28)

MSVSGMDNYEKLEKVGEGTYGKVYKARDKRSGQLVALKKTRLEMEEEGVPSTALREV  
SLLQMLSHSMYIVRLLCVEHVEKGSKPMLYLVFEYMDTDLKKYIDLHGRGPSGKPLPPK  
VVQSFMYQLCTGLAHCHGHGVMHRDLKPQNLLVDKQTRRLKIADLGLGRAFTVPMKS  
YTHEIVTLWYRAPEVLLGATHYSLPVDIWSVGCIFAE LVRKMPLFTGDSELQQLLHIFRL  
LGTPNETIWPGVSQHRDWHEFPQWRPQDLSLAVPGLSAVGLDLLAKMLVFEP SKRISAK  
AALSHTYFADV DKTAT

MSVSGMDNYEKLEKVGEGTYGKVYKARDKRSGQLVALKKTRLEMEEEGVPSTALREV  
SLLQMLSHSMYIVRLLCVEHVEKGSKPMLYLVFEYMDTDLKKYIDLHGRGPSGKPLPPK  
VVQSFMYQLCTGLAHCHGHGVMHRDLKPQNLLVDKQTRRLKIADLGLGRAFTVPMKS  
YTHEIVTLWYRAPEVLLGATHYSLPVDIWSVGCIFAE LVRKMPLFTGDSELQQLLHIFRL  
LGTPNETIWPGVSQHRDWHEFPQWRPQDLSLAVPGLSAVGLDLLAKMLVFEP SKRISAK  
AALSHTYFADV DKTAT

### FIGURE 3C

Deduced amino acid sequence of PK-8 from *Physcomitrella patens* (SEQ ID NO:29)

MADAKEELALRTEMHWA VRSNDVGLLR TILKKDKQLVNAADYDKRTPLHIAASLDCV  
PVAKVLLAEGAELNAKDRWGKSPRGEAESAGYMEMVKLLKDYGAESHAGAPRGHVE  
SLIQVAPPLPSNRDWEIAPSEIELDTSELIGKGAFGEIRKALWRGTPVAVKTIRPSLSNDR  
MVIKDFQHEVQLLVKVRHPNIVQFLGAVTRQRPLMLVTEFLAGGDLHQLLRSNPNLAP  
DRIVKYALDIARGMSYLNRSKPPIHRDLKPRNIIVDEEHELKVGDFGLSKLIDVKLMHD  
VYKMTGGTGSYRYMAPEVF EHQPYDKSVDFSGMILYEMFEGVAPFEDKDAYDAAT  
LVARDDKRPEMRAQTYPQM KALIEDCWSPYTPKRPPFVEIVKKLEV MYEDCLLR LPK  
DRRHRLRDILHLRRNPADS\*

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### FIGURE 3D

Deduced amino acid sequence of PK-9 from *Physcomitrella patens* (SEQ ID NO:30)

MKRYQRRKVQRLGREGQVLLERTLFKQLRPSPFVPHLLATPIDSDNVALVLNCVLAGPL  
ELLRSPLDENSARFLVANVVLAVELLHKDGVVYRGISPDVLMIDRKGRLQLVDFRFAK  
QMSDERTFTVCGMADFLAPEIIQGQGHGLASDWWAVGVLMYFMLQTELPFGSWRDNEL  
EIFGRIARRQLTFPSSFSPPEAVDLIDKLLVVDPTKRLGCDSHGSLAIREHPWFRGINWDKH  
LDCSVEVPSEIMTRLQLAIDFLPVDDSYQVFDLQPDEDDPPWLDGW\*

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### FIGURE 3E

Deduced amino acid sequence of CK-1 from *Physcomitrella patens* (SEQ ID NO:31)

MDLGGDRMRAPQRQSREYQYRSLDVFTEQHEQLKQQQQDEYQRTELKLETLPKMLS  
NATVSSSPRSSPDGRRRLRTVANKYAVEGMVGSAGFCKVYQGSDLTNHEVVGKLEDTR  
TEHAQLMHESRLYNILRGGKGVPNMRWFGKEQDYNVMVLDLLGPNLLHLFKVCGLRF  
SLKTVIMLGYQMIDRVEYVHSRGLVHRDLKPDNFLMGCGRQGNQVFIIIDFGLAKEYMD  
PATRRHIPYRDRKSFTGTARYASRNQHRGIEHSRRDDIESLGYILMYFLRGNLPWQGKG  
GQRLTDQKQHEYMHNKIKMNTTVEELCDGYPSQFADFLHHARSLGFYEQPDYCYLRSL  
FRDLFIQKKFQLDHVYDWTVTYTLQPQNGSLQSVRSQNSAASSHLQNRPSNVSYCPPLTK  
SEFRREVVAAN\*

### FIGURE 3F

Deduced amino acid sequence of CK-2 from *Physcomitrella patens* (SEQ ID NO:32)

MEPRVGNKYRLGRKIGSGSFGEIYLGTVNQTNEEVGIKLESIKTKHPQLLYESKLYRILQ  
GGTGIPNIRWFGIEGDYNVLVLDLLGPSLEDLFNFCSRKFSLKTVLMLADQLINRVEYVH  
AKSFLHRDIKPDNFLMGLGRRANQVYIIDFGLAKKYRDPSTHQHIPYRENKNLTGTARY  
ASINTHLGIEQSRDDLES LGYVLMYFLRGSLPWQGLKAGTKKQKYEKISEKKMSTPIEV  
LCKNYPSEFASYFHYCRSLRFDDKPDYAYLKRIFRDLFIREGFQFDYVFDWTILKYQQSQ  
ISGGSSTRLGASAGQTSGALGTGATGSRDLQRPTEPMDPSRRRLPGGANGSGVANALDS  
SKHKSPGLDESAKDSALAVVSEPERMHTSSYATRGGSSSRRAVLSSSRPSGASAEVVDSS  
RTGSSKLGPTSLRSSAGMQRSSPVTSDPKRISSRHPQPPSANLRIYEAAIKGVESLSVEVD  
QSRYK\*

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### FIGURE 3G

Deduced amino acid sequence of CK-3 from *Physcomitrella patens* (SEQ ID NO:33)

MSKARVYTDVNVQRPKDYWDYEALTVQWGDQDDYEVRKVGRGKYSEVFEGVNAV  
NSERCVMKILKPVKKKKIKREIKILQNLCGGPNIVKLLDIVRDQQSKTPSLIFEYVNNTDF  
KVLYP TLTDFDIRYYIHELLKALDYCHSQGIMHRDVKPHNVMIDHEQRKLRLIDWGLAE  
FYHPGKEYNVRVASRYFKGPELLVDLQDYDYS LDMWSLGCMFAGMIFRKEPFFYGH  
NYDQLVKIAKVLGTDELNSYLNKYRLELDPHLEALVGRHSRKPWSKFINADNQRLVVP  
EAVDFLDKLLRYDHQDRLTAKEAMAHFYFYPVKVSEVSNRRSA\*

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### FIGURE 3H

Deduced amino acid sequence of MPK-2 from *Physcomitrella patens* (SEQ ID NO:34)

METSSGTPELKVISTPTYGGHYVKYVVAGTDFEVTARYKPPLRPIGRGAYGIVCSLFDTV  
TGEEVAVKKIGNAFDNRIDAKRTLREIKLLRHMDHENVVAITDIIRPPTRENFNDVYIVY  
ELMDTDLHQIIRSNQALTEDHCQYFLYQILRGLKYIHSANVLHRDLKPTNLLVNANCDL  
KIADFGLARTLSETDFMTEYVVTRWYRAPELLNCSAYTAAIDIWSVGCIFMELLNRSAL  
FPGRDYVHQLRLITELIGTPEDRDLGFLRSDNARRYIKHLPRQSPIPLTQKFRGINRSALDL  
VEKMLVFDPAKRITVEAALAHPYLASLHDINDEPASVSPFEFDFEPPISEEHIKDLIWRE  
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### FIGURE 3I

Deduced amino acid sequence of MPK-3 from *Physcomitrella patens* (SEQ ID NO:35)

MGLTPFSCVTVQGYVRVVPDGHVENLSKSCSVHDL LLGNPDYYVCGSTPYTITNRMA  
AEEVLEYGVTYFVCATPNAQPFLERQPKVVHRGSKILPRFSKHGVHVRELRSPTHGSQQ  
SRKVFDYHSVTMQQLESIRNEGPEPHLAGDRPSKHLKLVFIRHCLRALRLPRISIDLMESP  
LPNLSGEALSPTATAKDEITQMILKSAARSELGMYVSKRQEFYLRRARRRRKFAWKPVL  
QSISEMKPVM EFHTPMAYRDSGSPPKNASTPSLPGPKNISPPRQVSV PQRSSPPPKNVSP  
PQPAFVARTASKYSAASQQVQRNRGNAKSLYMA\*

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### FIGURE 3J

Deduced amino acid sequence of MPK-4 from *Physcomitrella patens* (SEQ ID NO:36)

MSRRVRRGGLRVAVPKQETPVSKFLTASGTFQDDDIKLNHTGLRVVSSEPNLPTQTQSS  
SPDGQLSIADLELVRFLGKGAGGTVQLVRHKWTNVNYALKAIQMNINETVRKQIVQEL  
KINQVTHQQCPYIVECFHSFYHNGVISMILEYMDRGSLSDIHKQKQIPEPYLAVIASQVL  
KGLEYLHQVRHIIHRDIKPSNLLINHKGEVKISDFGVSAVLVHSLAQRDTFVGTCTYMSP  
ERLQGRSYAYDSDLWSLGLTLLECALGTFPYKPAGMEEGWQNFFILMECIVNQPPAAAS  
PDKFSPEFCSFIESCIRKCPSERPSTTDLLKHPFLQKYNEEEYHLSKIL\*

MSRRVRRGGLRVAVPKQETPVSKFLTASGTFQDDDIKLNHTGLRVVSSEPNLPTQTQSS  
SPDGQLSIADLELVRFLGKGAGGTVQLVRHKWTNVNYALKAIQMNINETVRKQIVQEL  
KINQVTHQQCPYIVECFHSFYHNGVISMILEYMDRGSLSDIHKQKQIPEPYLAVIASQVL  
KGLEYLHQVRHIIHRDIKPSNLLINHKGEVKISDFGVSAVLVHSLAQRDTFVGTCTYMSP  
ERLQGRSYAYDSDLWSLGLTLLECALGTFPYKPAGMEEGWQNFFILMECIVNQPPAAAS  
PDKFSPEFCSFIESCIRKCPSERPSTTDLLKHPFLQKYNEEEYHLSKIL\*

### FIGURE 3K

Deduced amino acid sequence of MPK-5 from *Physcomitrella patens* (SEQ ID NO:37)

MSRRVRRGGLRVAVPKQETPVSKFLTASGTFQDDDIKLNHTGLRVVSSEPNLPTQTQSSS  
PDGQLSIADLELVRFLGKGAGGTVQLVRHKWTNVNYALKAIQMNINETVRKQIVQELKI  
NQVTHQQCPYIVECFHSFYHNGVISMILEYMDRGSLSDIKQQKQIPEPYLAVIASQVLKG  
LEYLHQVRHIIHRDIKPSNLLNHKGEVKISDFGVSAVLVHSLAQRDTFVGTCTYMSPERL  
QGRSYAYDSDLWSLGLTLLECALGTFPYKPAGMEEGWQNFFILMECIVNQPPAAASPDK  
FSPEFCSFIESCIRKCPSERPSTTDLLKHPFLQKYNEEEYHLSKIL\*

MSRRVRRGGLRVAVPKQETPVSKFLTASGTFQDDDIKLNHTGLRVVSSEPNLPTQTQSSS  
PDGQLSIADLELVRFLGKGAGGTVQLVRHKWTNVNYALKAIQMNINETVRKQIVQELKI  
NQVTHQQCPYIVECFHSFYHNGVISMILEYMDRGSLSDIKQQKQIPEPYLAVIASQVLKG  
LEYLHQVRHIIHRDIKPSNLLNHKGEVKISDFGVSAVLVHSLAQRDTFVGTCTYMSPERL  
QGRSYAYDSDLWSLGLTLLECALGTFPYKPAGMEEGWQNFFILMECIVNQPPAAASPDK  
FSPEFCSFIESCIRKCPSERPSTTDLLKHPFLQKYNEEEYHLSKIL\*

[illegible]

MGQCYGKFFDDGGEGEDLFRQKVQVSRTPKHGWSNSNRGSGFNNGGGASPMRAKTSFG  
SSHPSPRHPSASPLPHYTSSPAPSTPRRNIFKRPFPPPPSPAKHIQSSLVKRHGAKPKEGGAIP  
EAVDGEKPLDKHFGYHKNFATKYELGHEVGRGHFGHTCYAKVRKGEHKGQAVAVKIIS  
KAKMTTAAIAEDVGREVKILKALTGHQNLVRFYDSCEDHLNVYIVMELCEGGELLDRILS  
RGGKYSEEDAKVVVRQILSVVAFCHLQGVVHRDLKPENFLFTTKDEYAQLKAIDFGLSD  
FIKPDERLNDIVGSAYYVAPEVLHRLYSMEADVWSIGVITYILLCGSRPFWARTESGIFRA  
VLRADPSFEEAPWPSISPEAKDFVKRLLNKDMRKRMTAAQALTHPWIRSNNVKIPLDILV  
YRLVRNYLRASSMRKAALKALSKTLTEDETFYLRTQFMILLEPSNNGRVTFENFRQALLK  
NSTEAMKESRVFEILESMDGLHFKKMDFSEFCAAISVLQLEATERWEQHARAAYDIFEK  
EGNRVIYPDELAKEMGLAPNVPAQVFLDWIRQSDGRLSFTGFTKLLHGISSRAIKNLQQ\*

### FIGURE 3M

Deduced amino acid sequence of CPK-2 from *Physcomitrella patens* (SEQ ID NO:39)

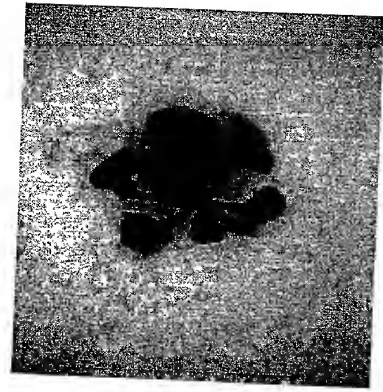
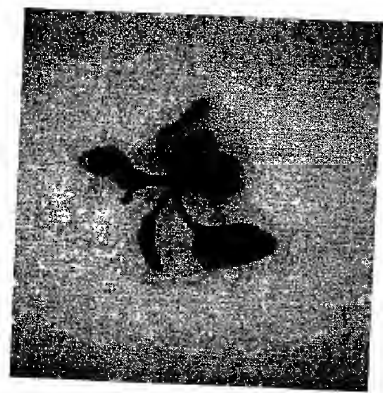
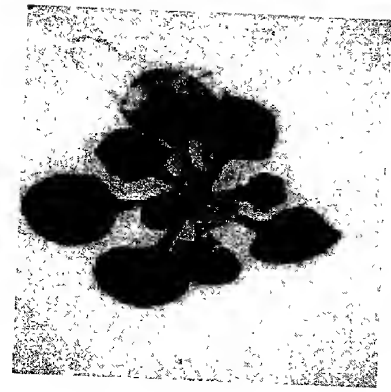
MGNTSSRGSRKSTRQVNQGVGSQDTREKNDSVNP KTRQGGSVGANNYGGKPSSGAQA  
GERSTSAPAALPRPKPASRSVSGVLGKPLSDIRQSYILGRELGRGQFGV TYLCTDKMTNE  
AYACKSI AKRKLTSKEDIEDVKREVQIMHHLSGTPNIVVLKDV FEDKHSVHLMELCAG  
GELFDRIIAKGHYSERAAADMCRVIVNVVHRCHSLGVFHRDLKPENFLLASKAEDAPLK  
ATDFGLSTFFKPGDVFQDIVGSAYYVAPEVLKRSYGPEADVWSAGVIVYILLCGVPPFWA  
ETEQQIFDAVLKGHIDFENDPWPKISNGAKDLVRKMLNPNVKIRLTAQQVLNHPWMKED  
GDAPDVPLDNAVLTRLKNFSAANKMKKLALKVIAESLSEEEIVGLREMFKSIDTDNSGTV  
TFEELKEGLLKQGSKLNESDIRKLMEEAADVDGNGKIDFNEFISATMHMKNKTEKEDHLWA  
AFMHFDTDNSGYITIDELQEAMEKNGMGDPETIQEIISEVDTDNDGRIDYDEFVAMMRK  
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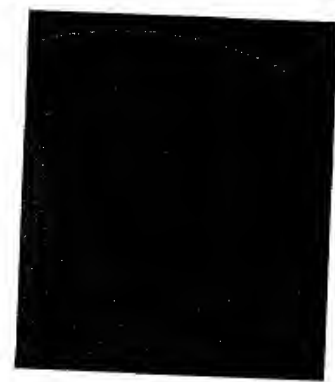
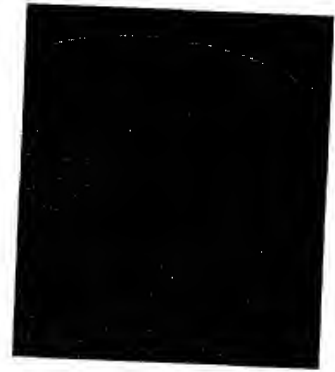




Figure 5



PpPK-6  
Drought



Control  
Drought

Figure 6

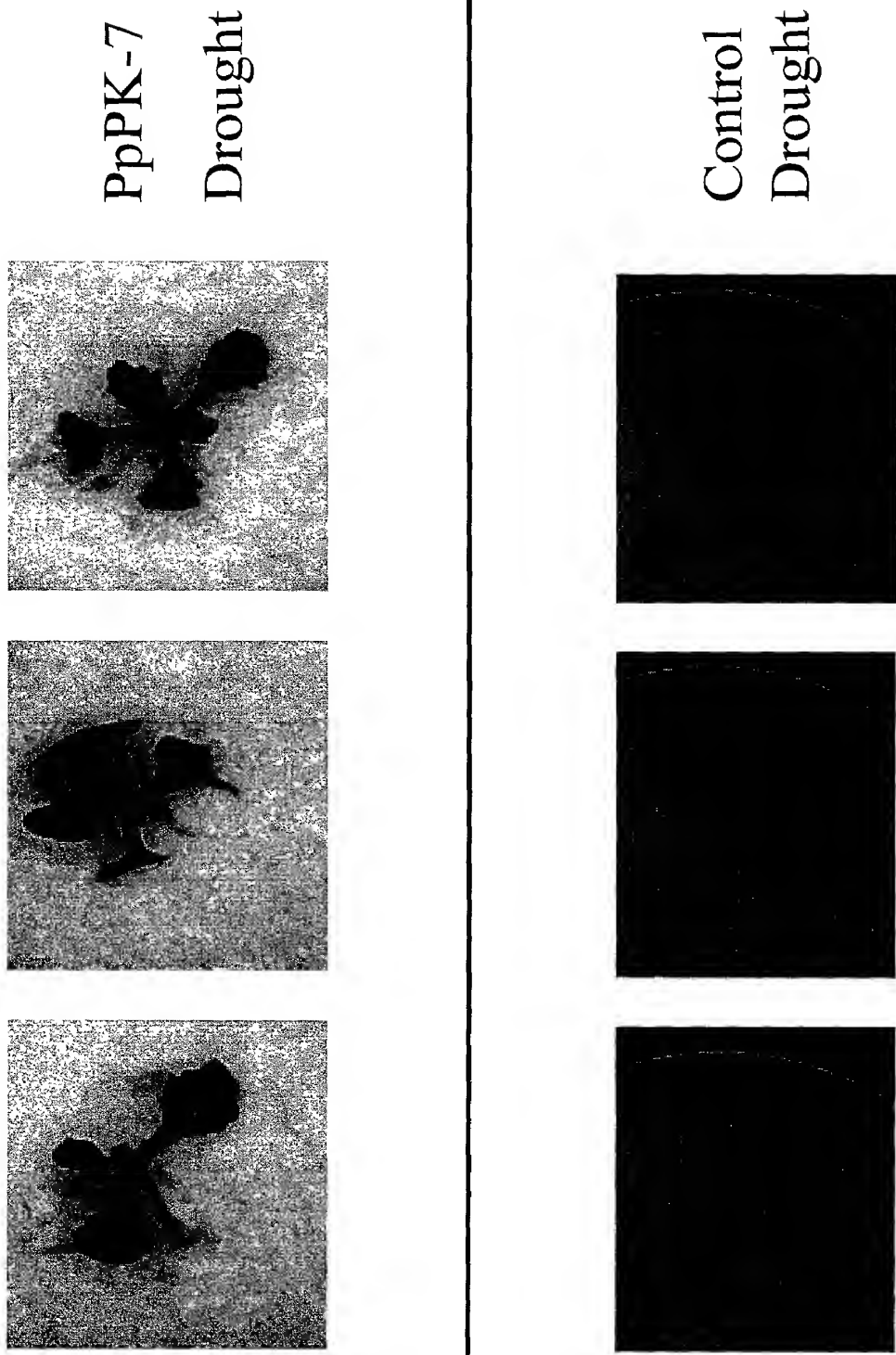
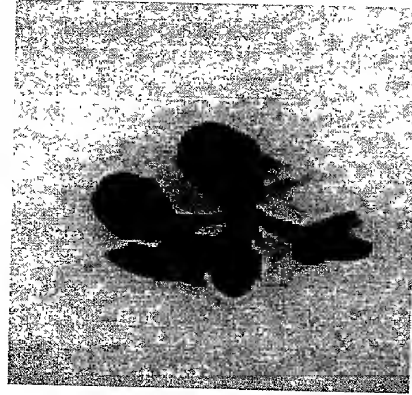
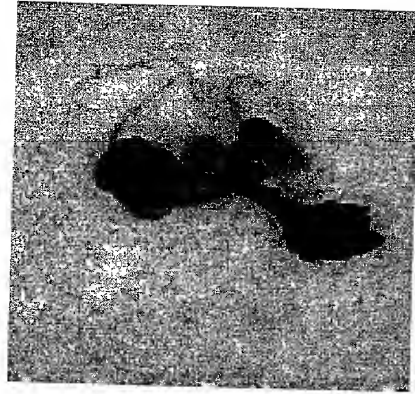
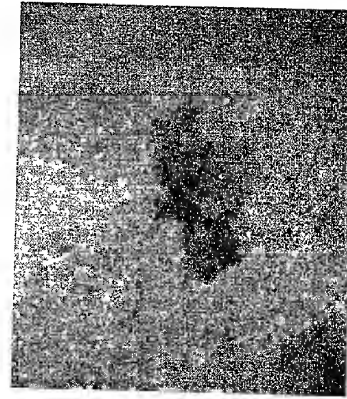


Figure 7



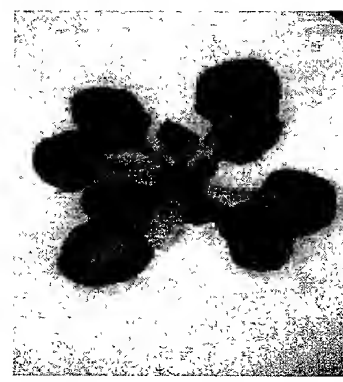
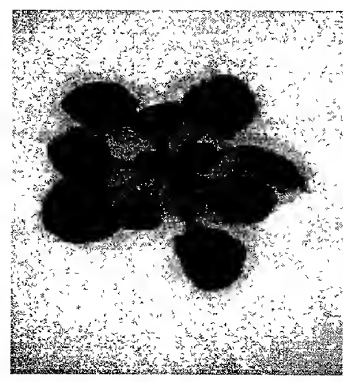
PpPK-7  
Freezing



Control  
Freezing

Figure 8

Figure 8



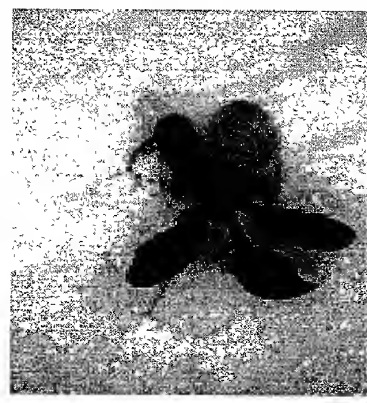
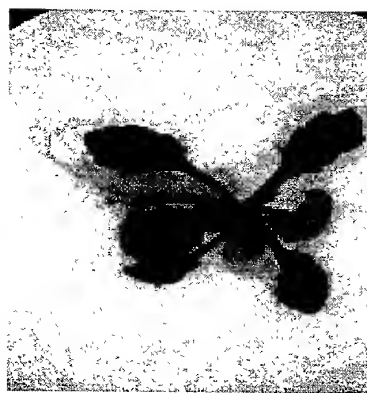
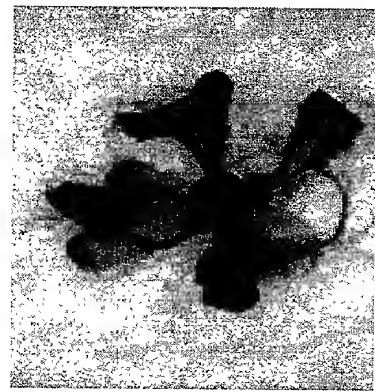
PpMPK-3  
Drought



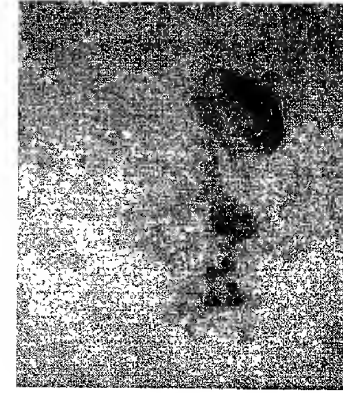
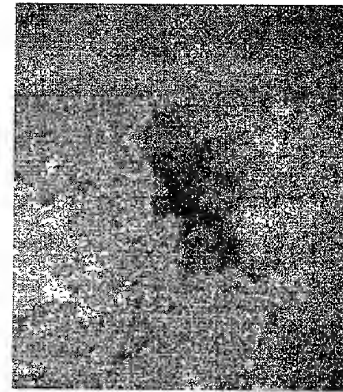
Control  
Drought

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Figure 9



PpPK-9  
Freezing



Control  
Freezing

Figure 10

Figure 10

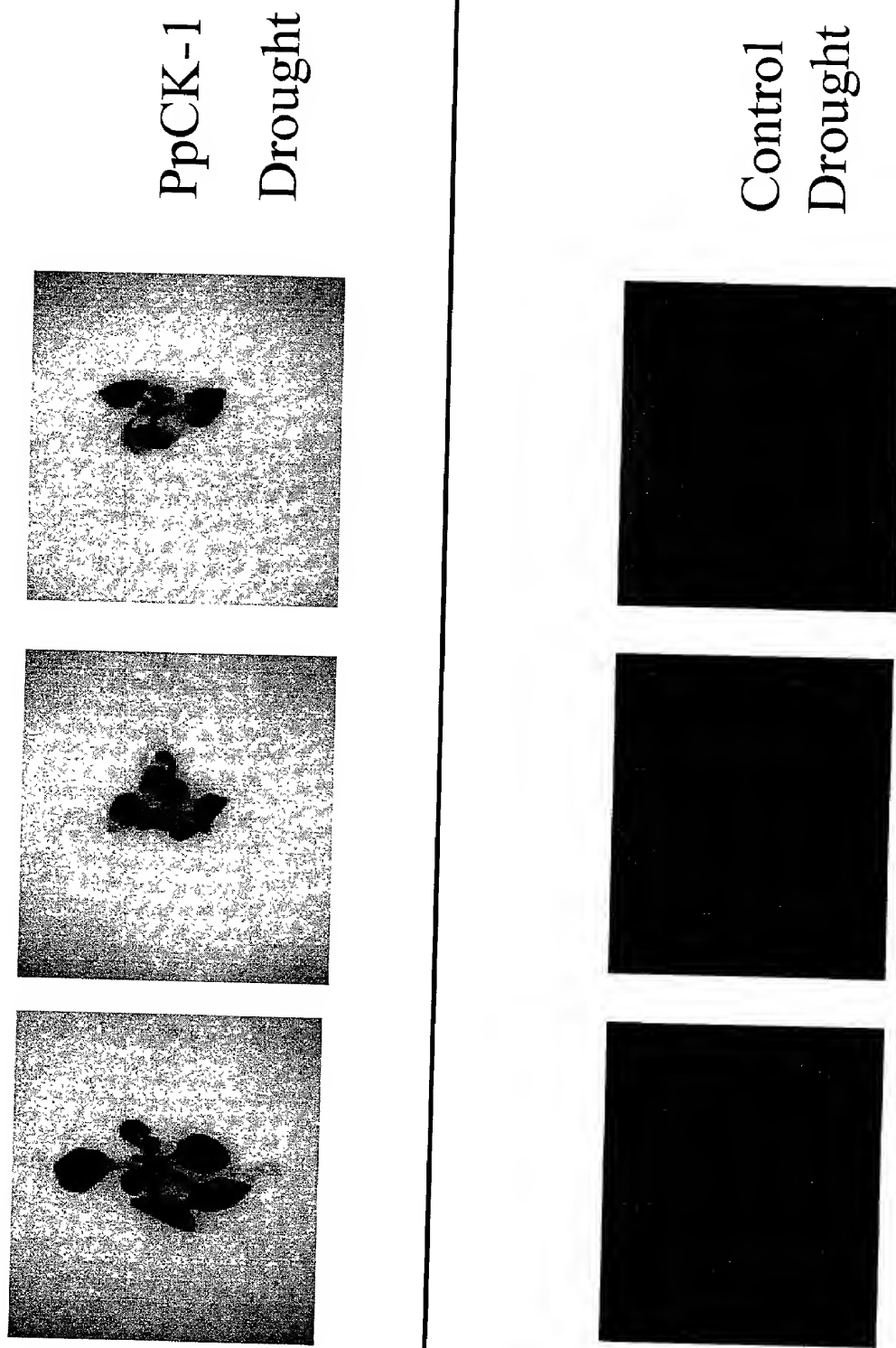
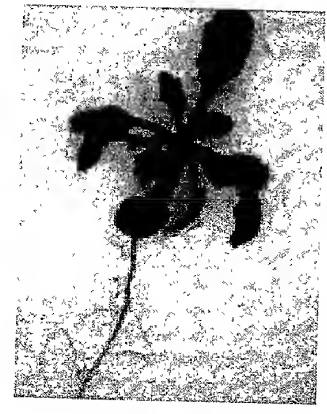
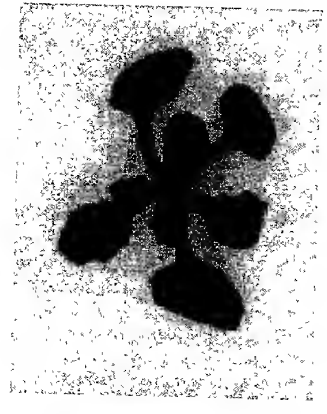
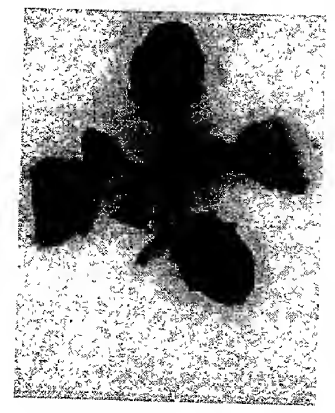
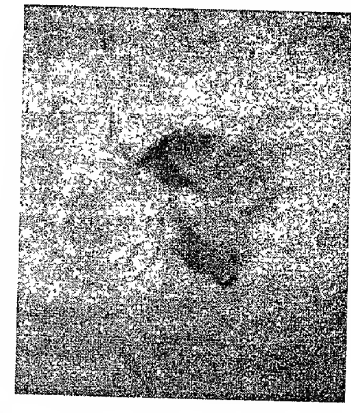
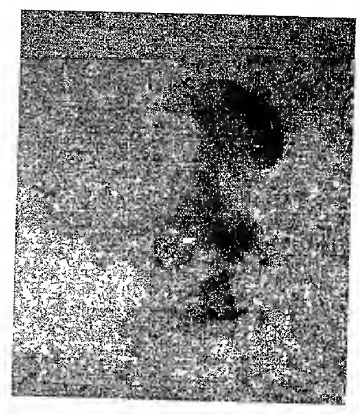
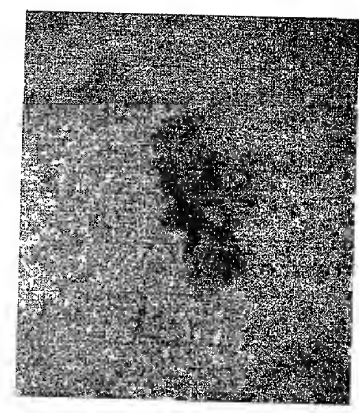


Figure 11 shows three photographs of plant material, likely Arabidopsis, arranged in a row. The first two images show healthy, green plants, while the third image shows a plant that appears to be dead or severely damaged, with only a few remaining green leaves. The text 'Figure 11' is positioned to the left of the images.

Figure 11



PpCK-1  
Freezing



Control  
Freezing

Figure 12 shows the effect of PpCK-2 on the growth of Arabidopsis thaliana under drought stress. The plants were grown in a controlled environment and subjected to drought stress for 7 days. The control plants (Control Drought) show severe wilting and death, while the PpCK-2 treated plants (PpCK-2 Drought) show significant growth and survival.

Figure 12

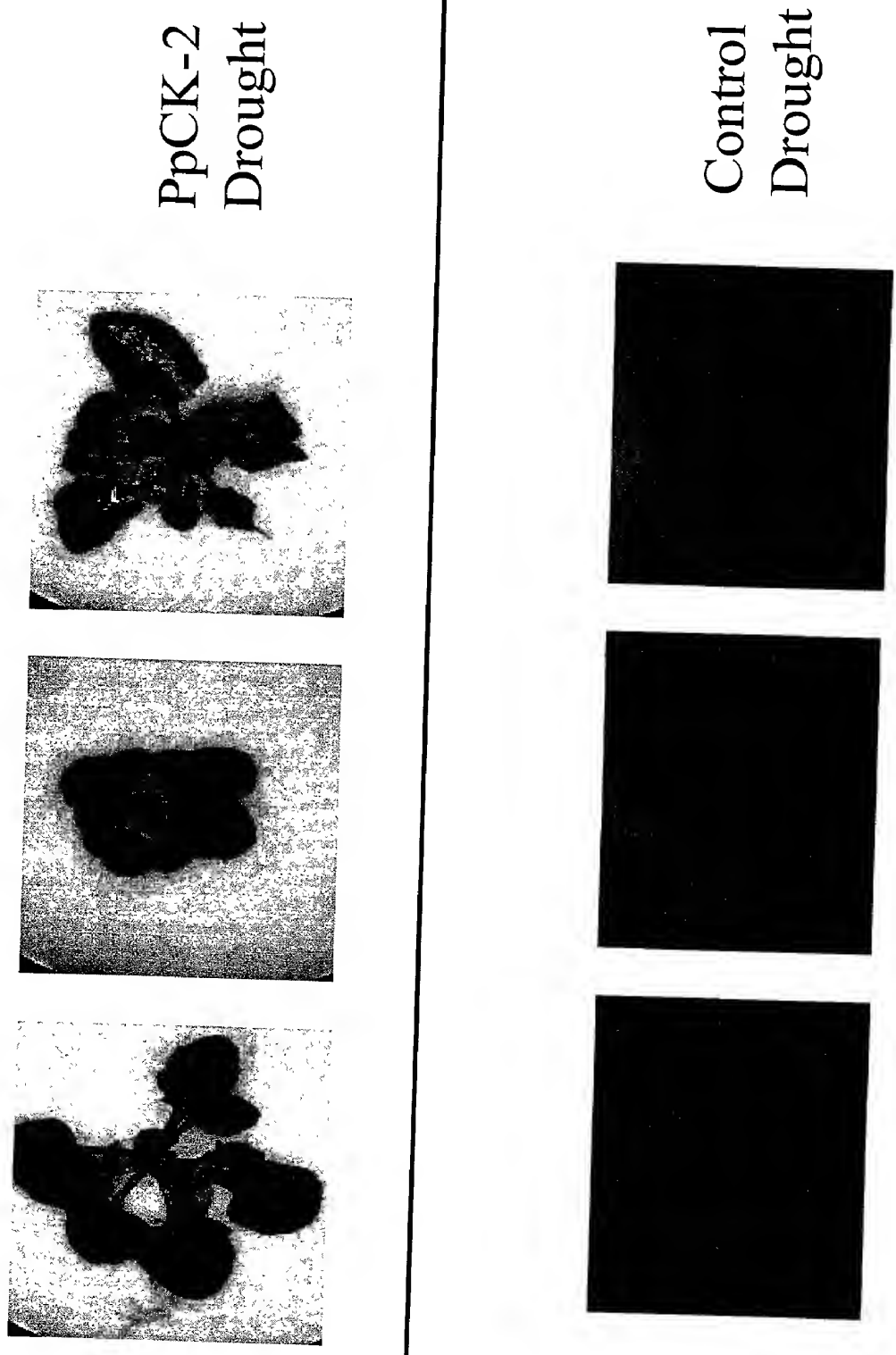




Figure 13 shows three panels of plant tissue under different conditions. The top panel is labeled 'PpCK-3 Drought' and shows three distinct dark spots on a light background. The middle panel is labeled 'Control' and shows a single dark spot. The bottom panel is labeled 'Drought' and shows a single dark spot. The labels are positioned to the right of the corresponding panels.

Figure 13

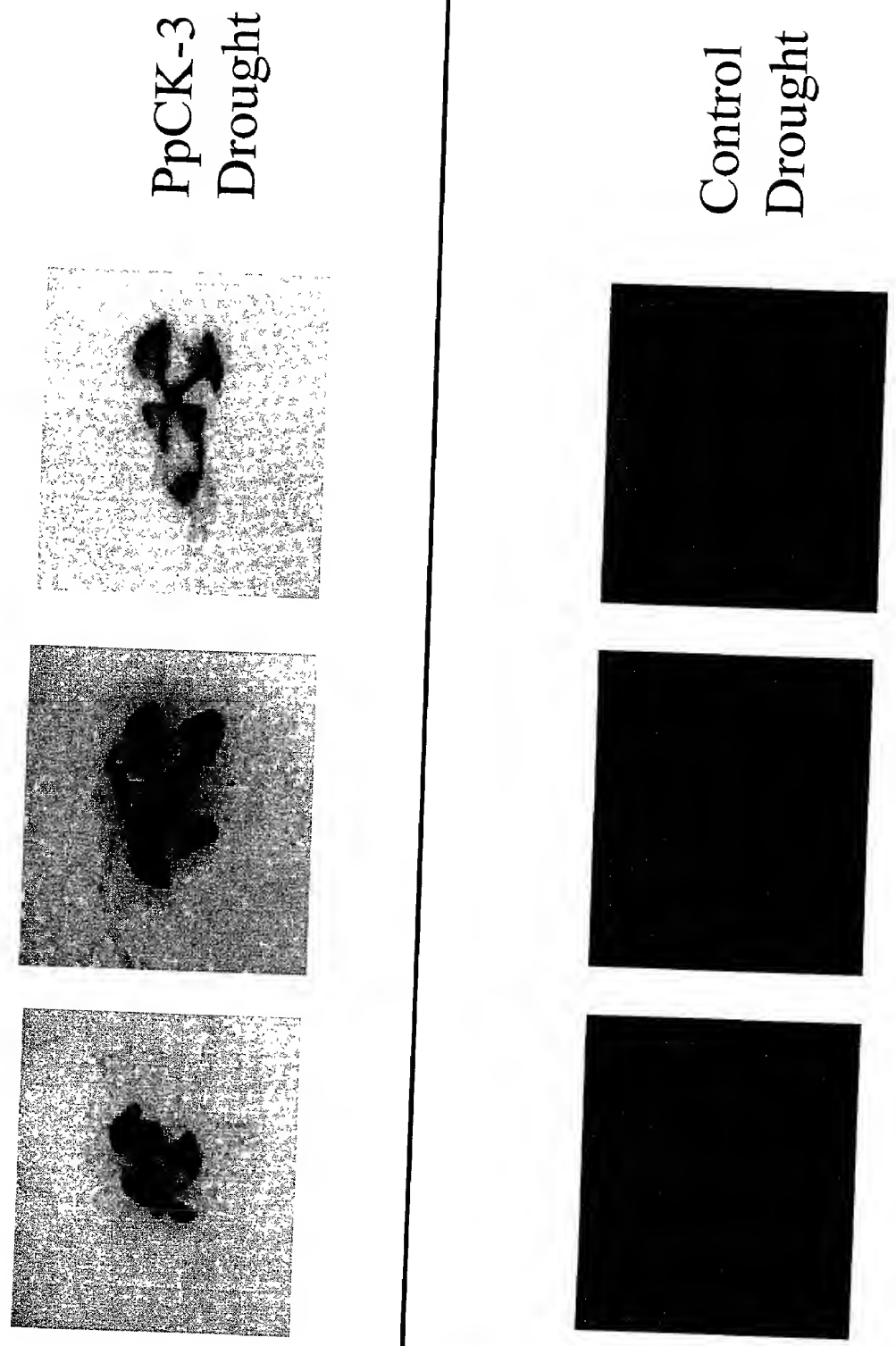
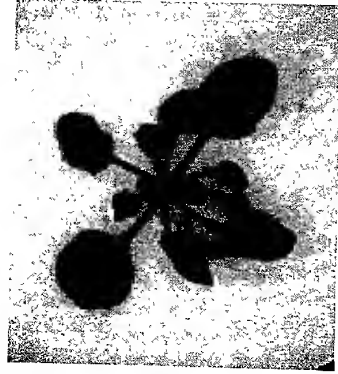
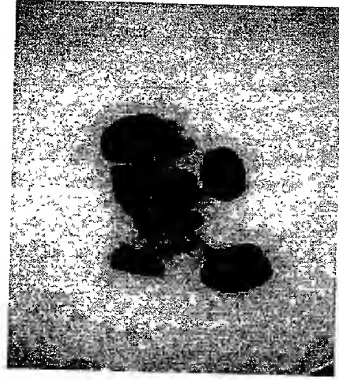
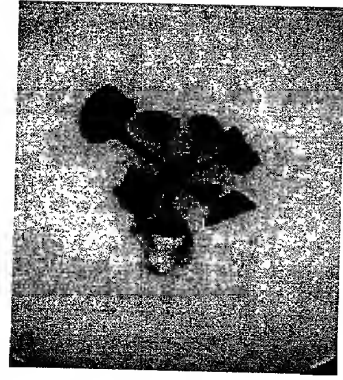


Figure 14

Figure 14

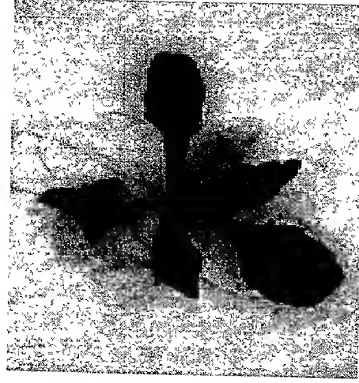


PpMPK-2  
Drought

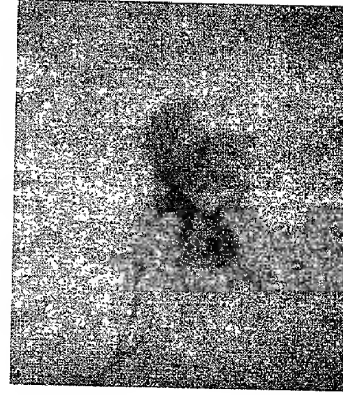


Control  
Drought

Figure 15



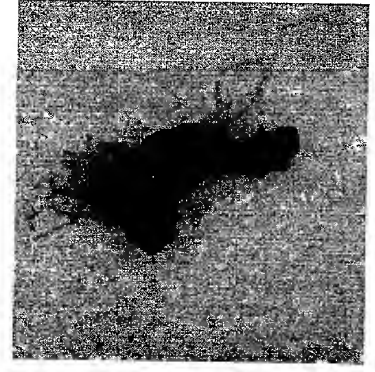
PpMPK-2  
Freezing



Control  
Freezing

Figure 16 shows the effect of PpMPK-3 on the growth of Arabidopsis thaliana under drought conditions. The figure is divided into two main sections: 'PpMPK-3 Drought' and 'Control Drought'. Each section contains three images of Arabidopsis plants. The 'PpMPK-3 Drought' section shows three plants that appear to be growing and have a similar size to the control plants. The 'Control Drought' section shows three plants that appear to be dead or severely wilted, indicating that the control plants did not survive the drought conditions.

Figure 16

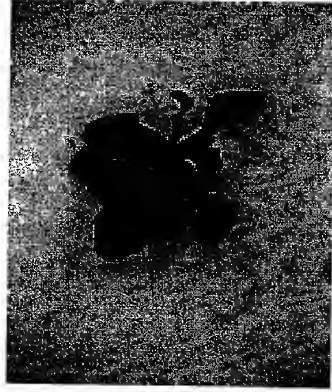


PpMPK-3  
Drought

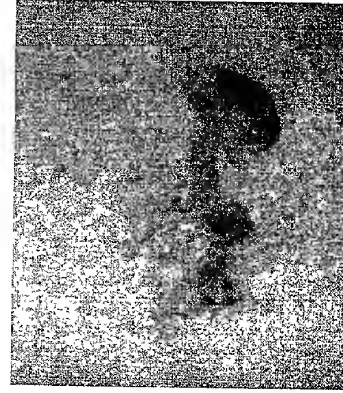
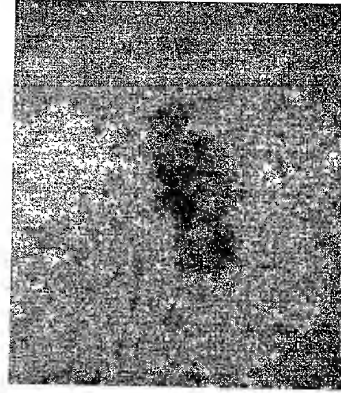


Control  
Drought

Figure 17



PpMPK-3  
Freezing



Control  
Freezing

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Figure 18

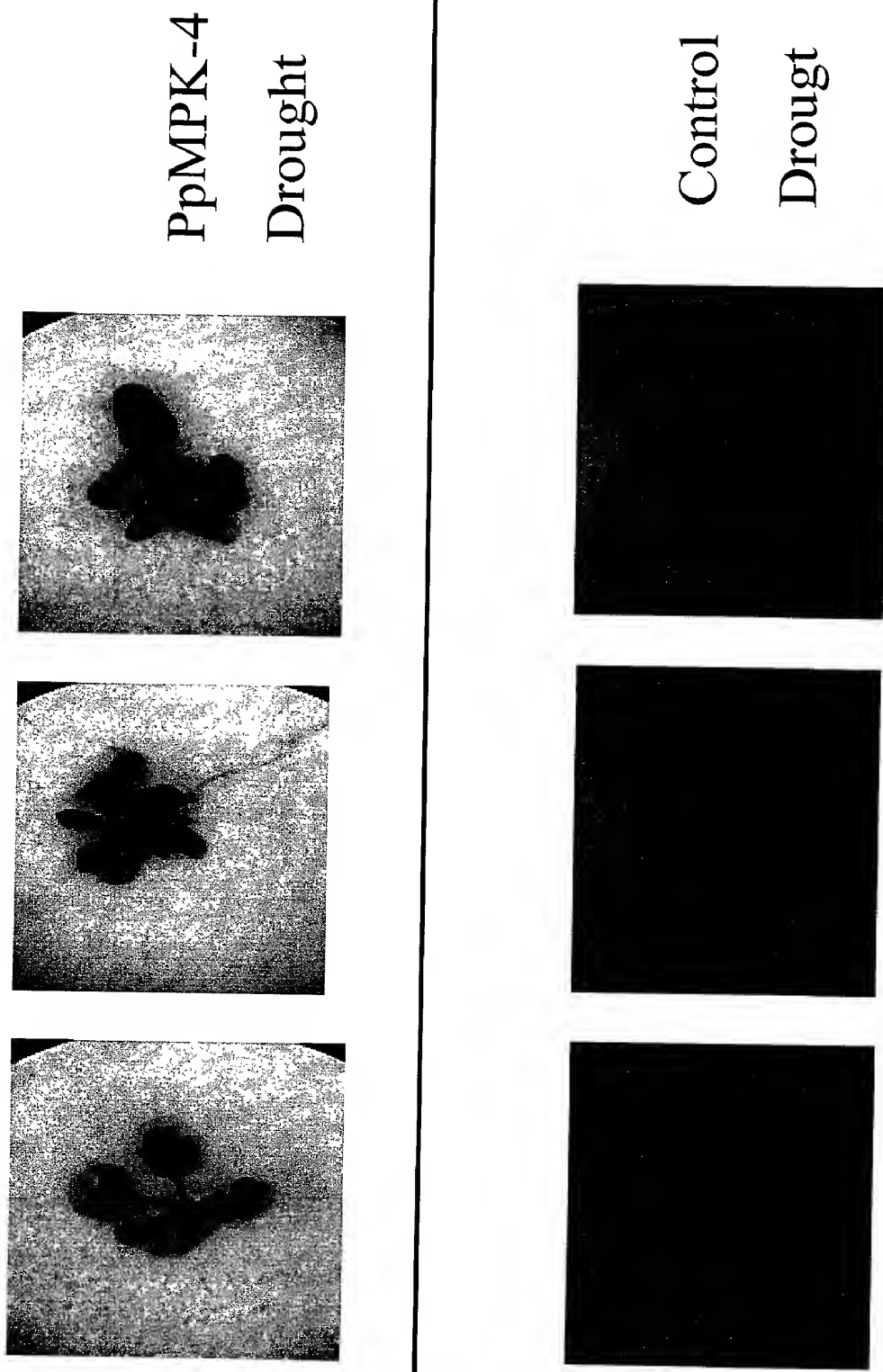
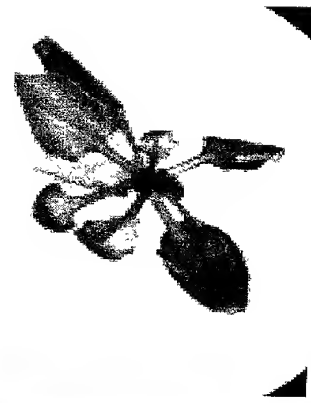
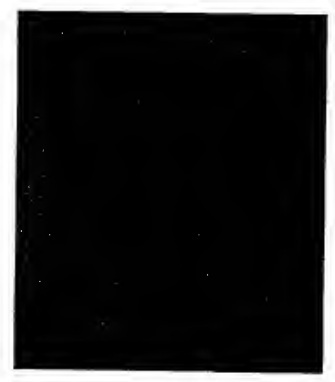
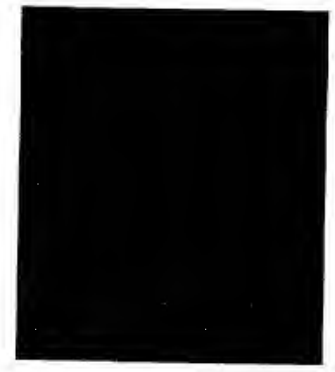


Figure 19



PpMPK-5  
Drought



Control  
Drought

Figure 20

Figure 20

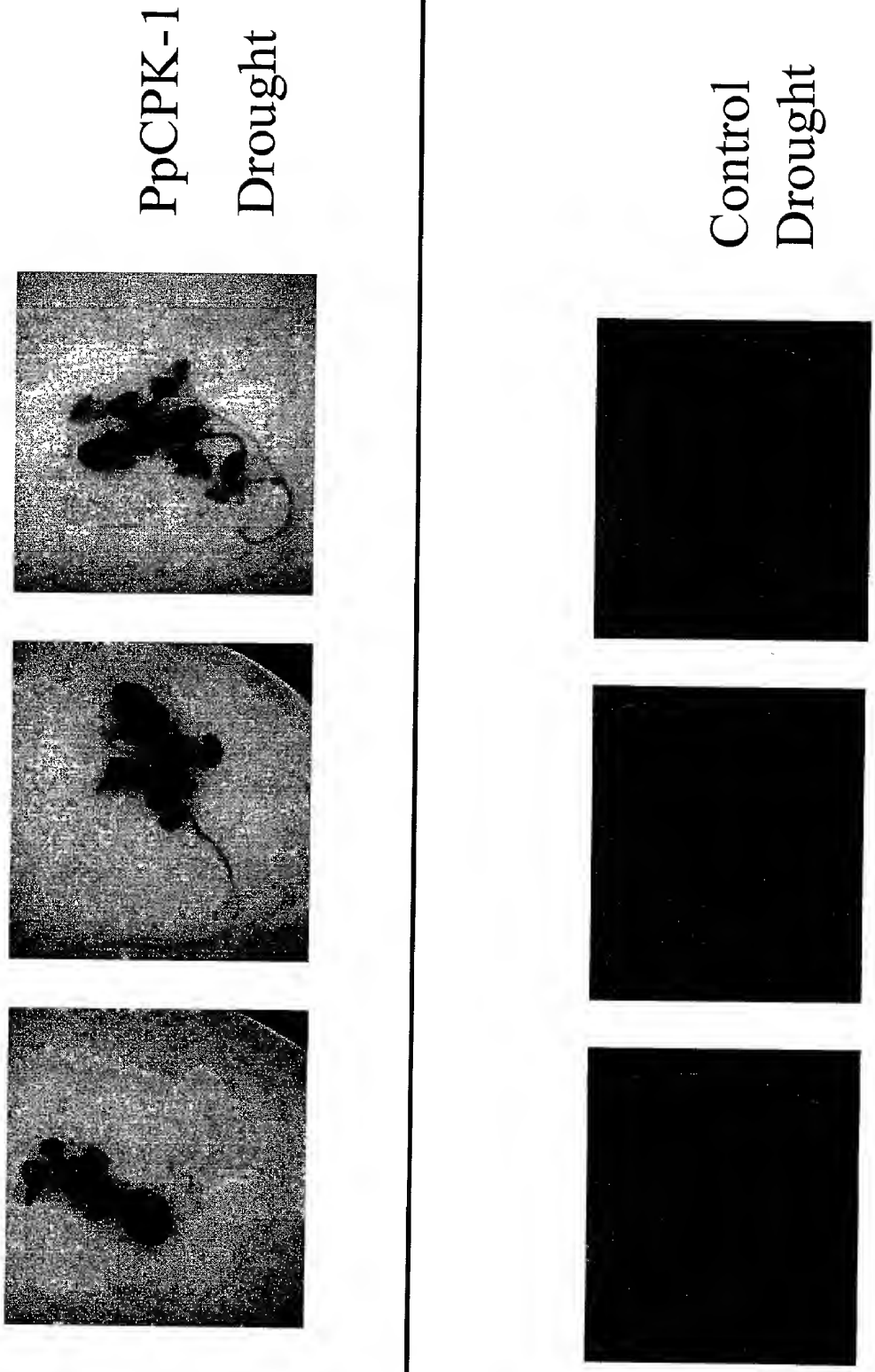




Figure 21 shows the effect of PpCPK-2 on the growth of Arabidopsis thaliana under drought conditions. The figure is divided into two main sections: 'PpCPK-2 Drought' and 'Control Drought'. Each section contains three images of Arabidopsis plants. The 'PpCPK-2 Drought' section shows three plants that appear to be growing and have a similar size to the control plants. The 'Control Drought' section shows three plants that appear to be dead or severely wilted, indicating that the control plants did not survive the drought conditions.

Figure 21

